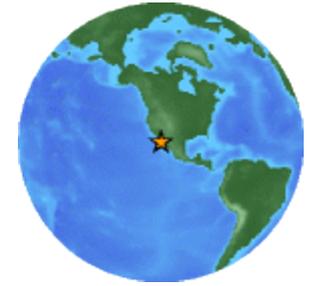


Magnitude 6.9 GULF OF CALIFORNIA

Thursday, April 12, 2012 at 17:59:56 UTC

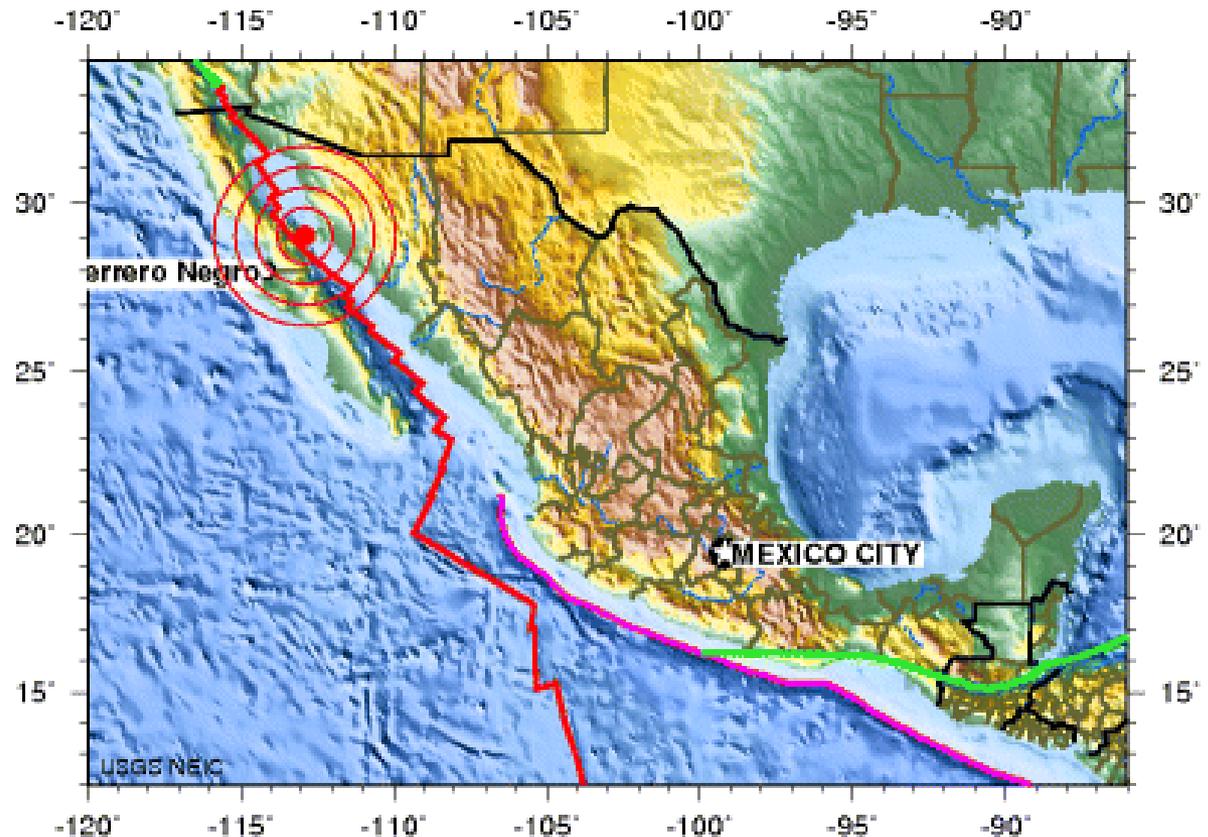


USGS

A pair of strong earthquakes struck off the coast of Mexico early Thursday only minutes apart. The magnitude 6.9 and 6.2 were centered about 85 miles northeast of Guerrero Negro in the Mexican state of Baja California, or 325 miles south-southwest of Phoenix in the United States.

Authorities said neither earthquake caused major damage or injuries. The earthquake was the third to shake Mexico City in as many weeks and rattled the nerves of weary residents.

People as far north as Tucson, Arizona reported feeling the earthquake.

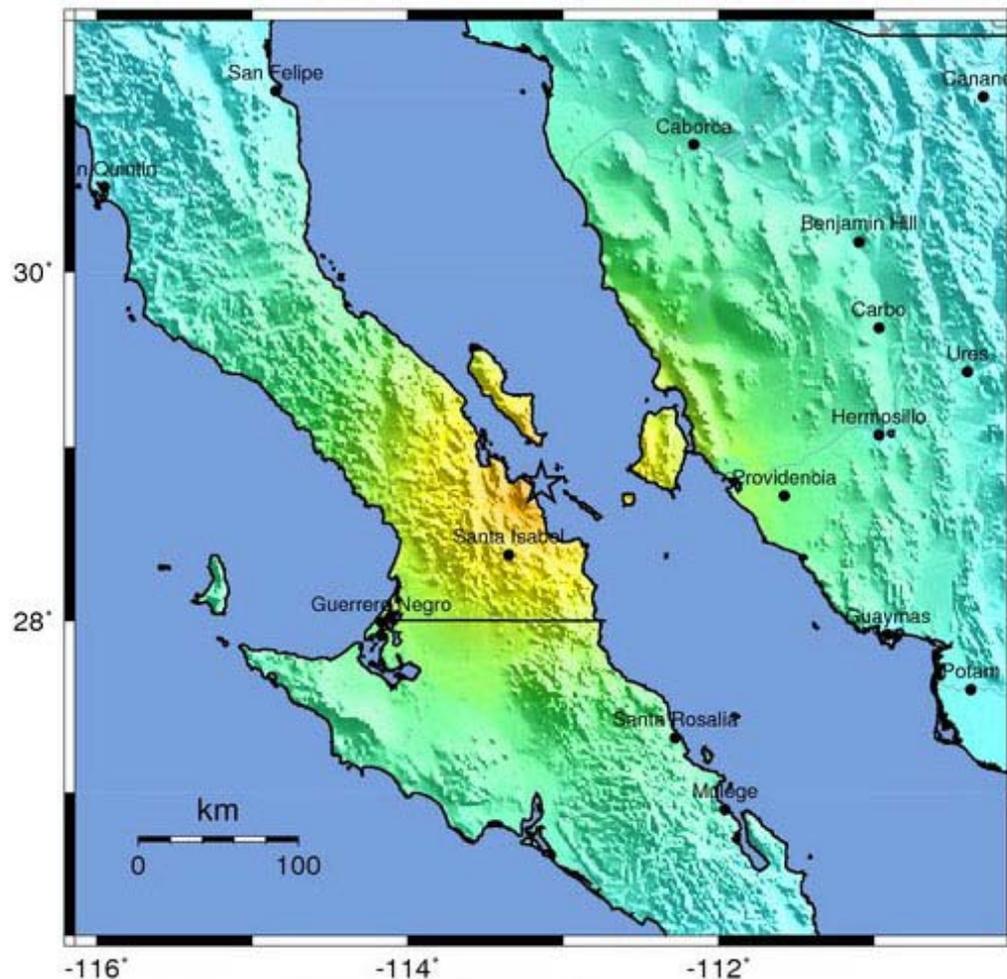


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Shaking intensity scales were developed to standardize the measurements and ease comparison of different earthquakes. The Modified-Mercalli Intensity scale is a twelve-stage scale, numbered from I to XII. The lower numbers represent imperceptible shaking levels, XII represents total destruction. A value of IV indicates a level of shaking that is felt by most people.

| Modified Mercalli Intensity | Perceived Shaking |
|-----------------------------|-------------------|
| X | Extreme |
| IX | Violent |
| VIII | Severe |
| VII | Very Strong |
| VI | Strong |
| V | Moderate |
| IV | Light |
| II-III | Weak |
| I | Not Felt |



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USGS PAGER

Population Exposed to Earthquake Shaking

The USGS PAGER map shows the population exposed to different Modified-Mercalli Intensity (MMI) levels. MMI describes the severity of an earthquake in terms of its effect on humans and structures and is a rough measure of the amount of shaking at a given location.

Overall, the population in this region resides in structures that are a mix of vulnerable and earthquake resistant construction.

The color coded contour lines outline regions of MMI intensity. The total population exposure to a given MMI value is obtained by summing the population between the contour lines. The estimated population exposure to each MMI Intensity is shown in the table below.

Image courtesy of the US Geological Survey



| Estimated Modified Mercalli Intensity | I | II-III | IV | V | VI | VII | VIII | IX | X |
|---|----------|--------|---------|----------|--------|-------------|--------|---------|---------|
| Est. Population Exposure | --- | --- | 1,477k* | 140k | 14k | 1k | 0 | 0 | 0 |
| Perceived Shaking | Not Felt | Weak | Light | Moderate | Strong | Very Strong | Severe | Violent | Extreme |

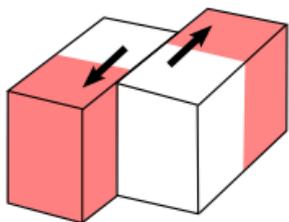
Magnitude 6.9 GULF OF CALIFORNIA

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The map on the right shows historic earthquake activity from 1990 to present near the epicenter (star).

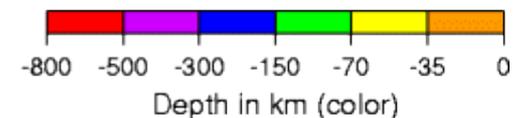
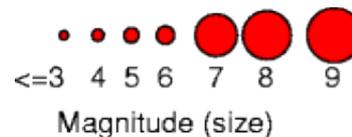
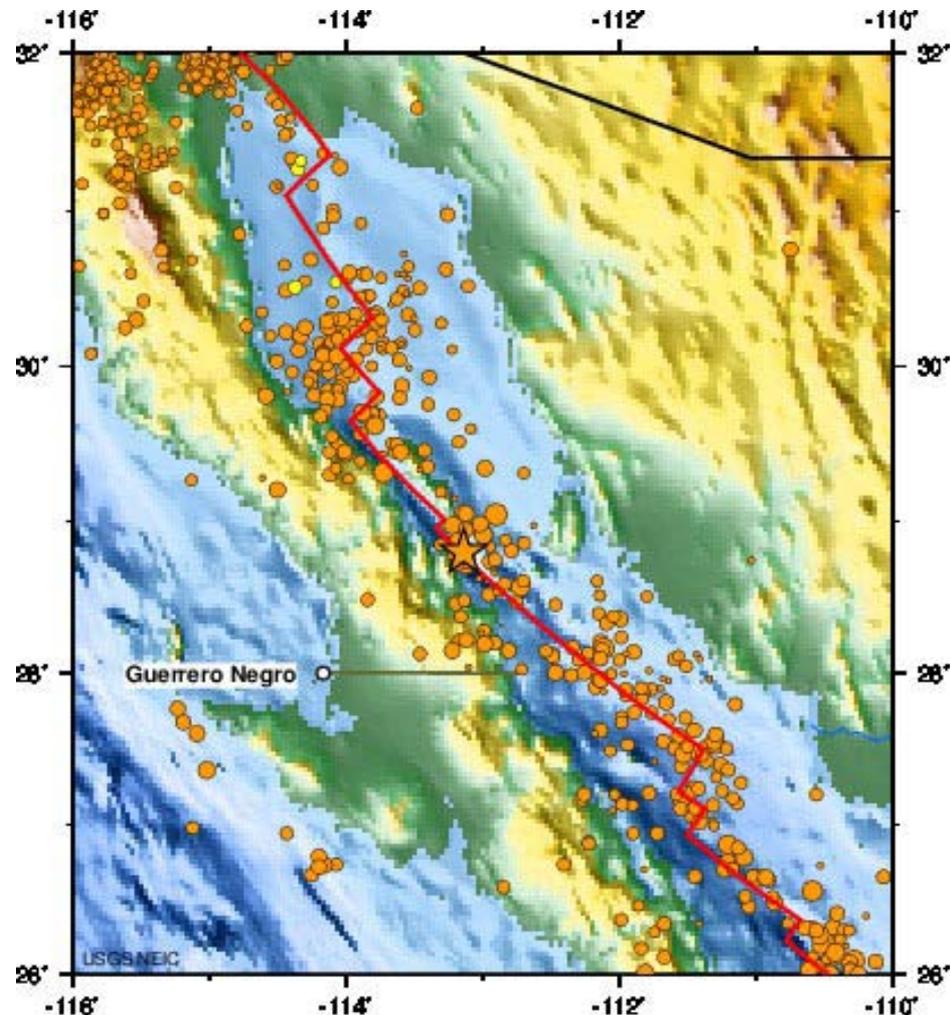
This earthquake occurred in the plate boundary region between the North America and Pacific plate. At the latitude of the earthquake, the Pacific plate moves northwest with respect to the North America plate at about 45 mm/yr.

The plate boundary beneath the Gulf consists of a series of transform faults separated by small spreading centers or pull-apart basins. This earthquake was a result of strike-slip faulting.



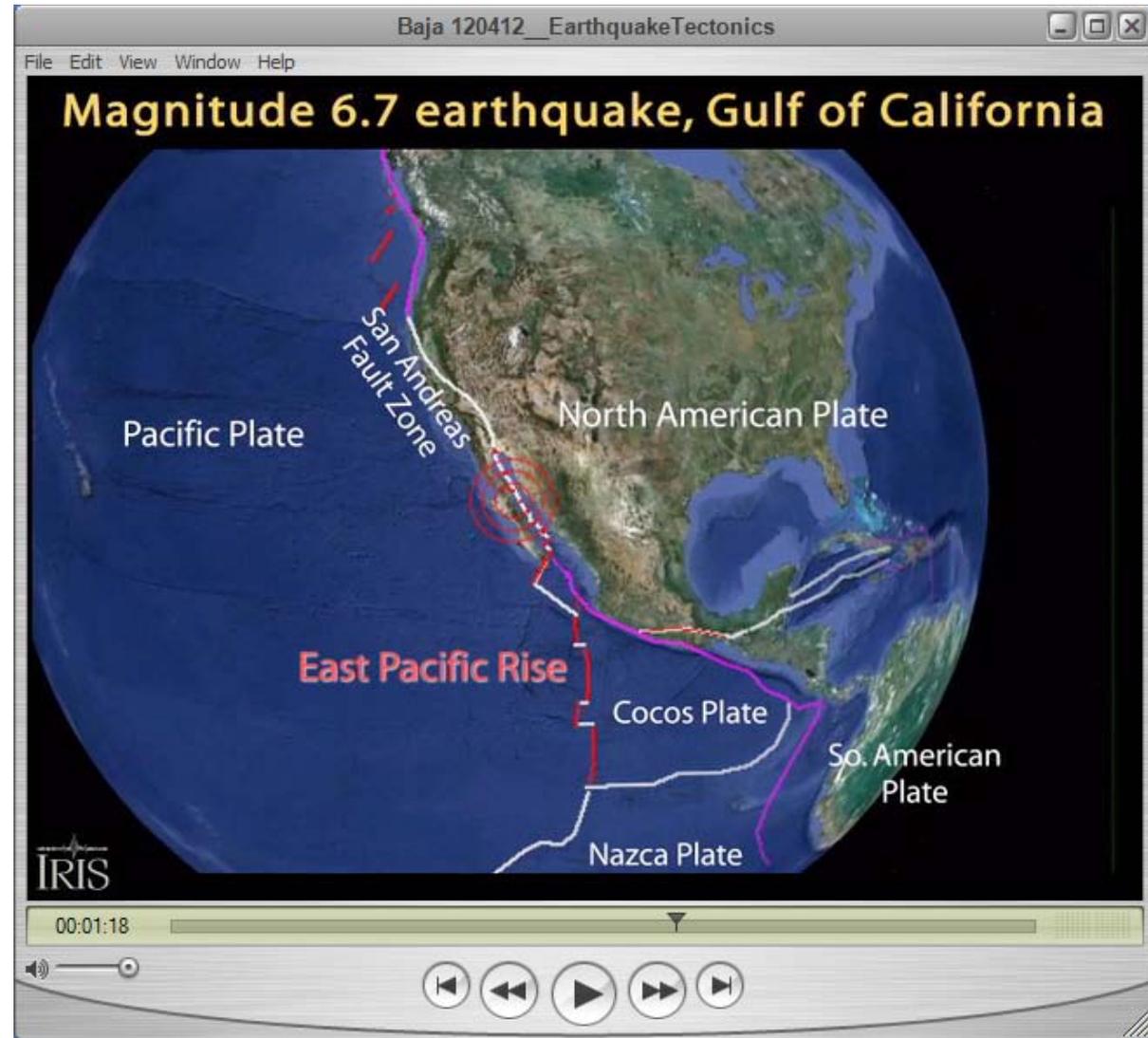
strike-slip fault

Image courtesy of the U.S. Geological Survey



Areas off Mexico's coastline on the Gulf of California, including the Baja California Peninsula, are riding northwestward on the Pacific plate. Rather than one plate subducting, the Pacific and North American plates grind past each other, creating a strike-slip fault that is the southern extension of the San Andreas fault in California.

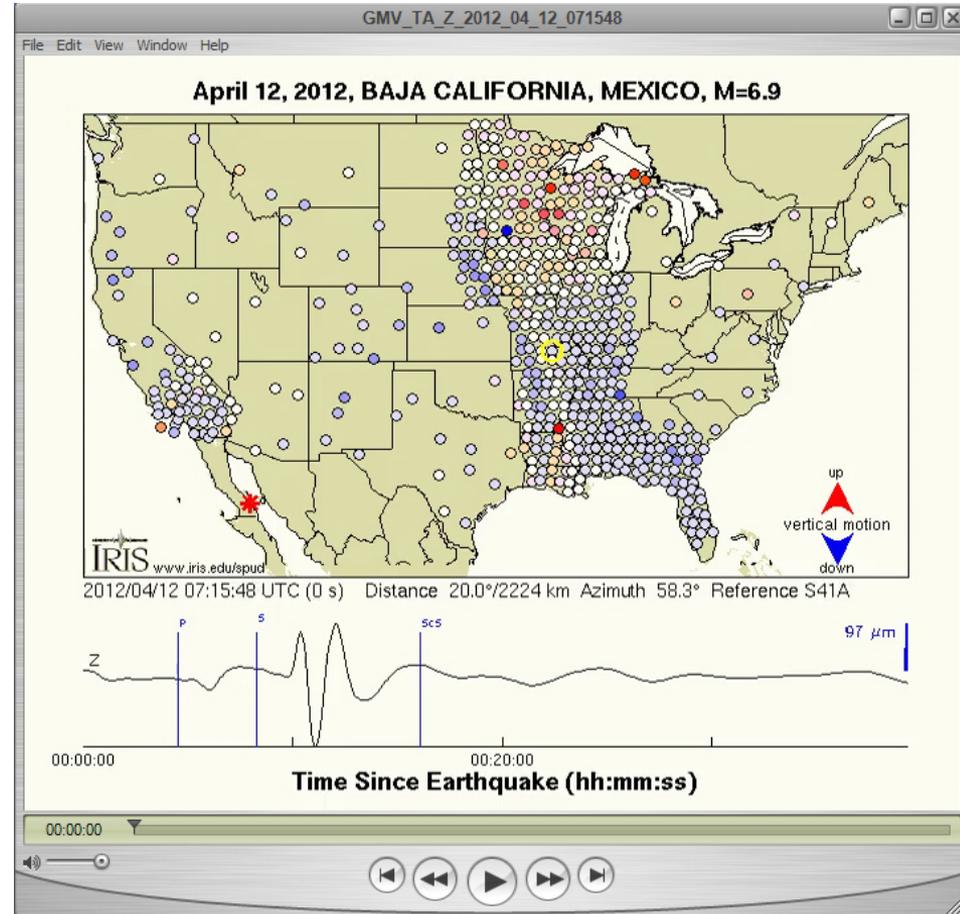
Motion along this fault in the past pulled Baja California away from the coast, creating the Gulf of California. Continued motion along this fault is the source of earthquakes in western Mexico.



As earthquake waves travel along the surface of the Earth, they cause the ground to move. With the 400 earthquake recording stations in EarthScope's Transportable Array, the ground motions can be captured and displayed as a movie, using the actual data recorded from the earthquake.

The circles in the movie represent earthquake recording stations and the color of each circle represents the amplitude, or height, of the earthquake wave detected by the station's seismometer.

A random representative trace is displayed on the lower part of the animation with its horizontal axis representing the time (in seconds) after the event. Location of the representative station is marked on the map by a yellow circle.



Seismic waves crossing the US recorded by the USArray.