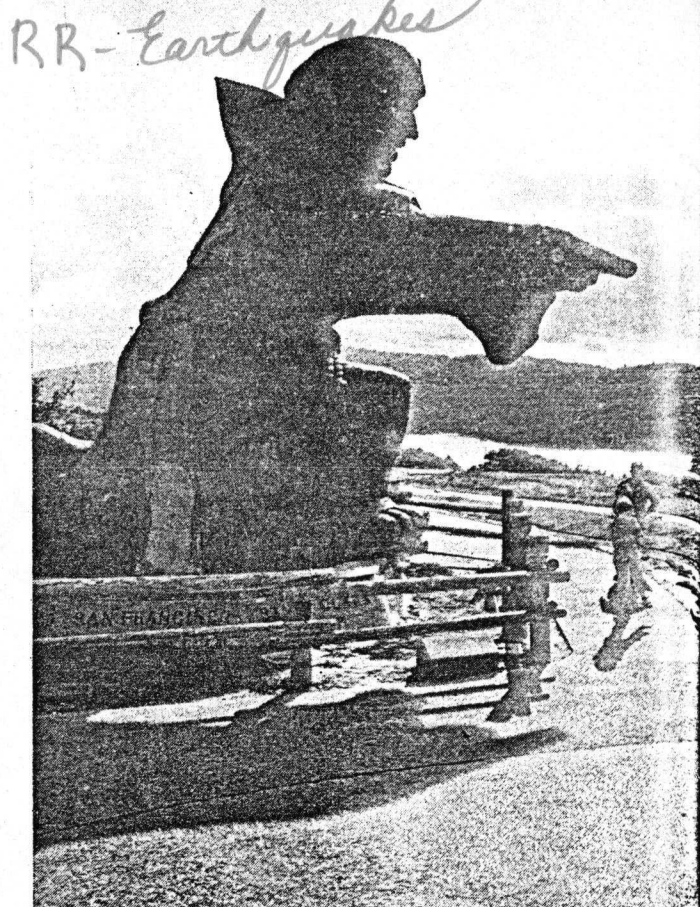
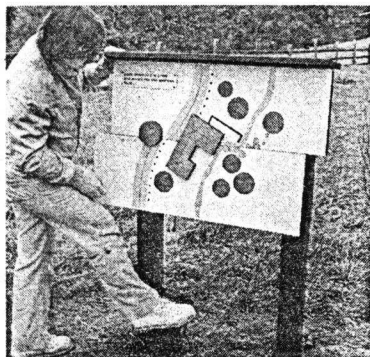


JERRY FREDRICK

Fault-shifted fence (above) on old ranch near Olema was offset 16 feet by 1906 quake. At right, your foot can activate the San Andreas—at least at this display station on the Earthquake Trail



RR - Earthquakes

Exploring the San Andreas fault

One way to understand earthquakes is to see what they've done... from Point Reyes to San Juan Bautista

Slicing through the crust of California across some 650 miles, the San Andreas fault is at once the most infamous and one of the least understood features of the state's landscape. This month marks the 76th anniversary of the fault's most memorable move so far: the great San Francisco earthquake of April 18, 1906.

Straddling the San Andreas on foot may send a shiver down your spine; or it may help you understand that this master fault is as much a part of central California's geography as the Santa Cruz Mountains or San Francisco Bay. We've devised an itinerary that guides you to some of the most accessible evidence of the San Andreas's action along a 100-mile segment from Olema to Mission San Juan Bautista.

We pinpoint four sites where you can walk directly along the fault or zigzag across it. The sites trace a portion of the surface rupture of the 1906 quake (8.25 on the Richter magnitude scale).

Each area offers the bonus of a scenic vista that ranges from gently undulating ranchland to a craggy seascape. At two spots—and at one nearby detour—seismographs and displays help you learn more about the fault's nature.

What is the San Andreas?

We now know that the San Andreas is not a single fracture, but a complex zone varying in width from a few hundred feet to a mile or more, and cutting almost vertically into the earth to a depth of perhaps 10 to 15 miles. Crushed rock fills this zone; other faults branching from it make up the San Andreas system.

Earth scientists now recognize the San Andreas as a boundary in the earth's crust where the Pacific and North American plates meet (see map inset).

Olema. "You are standing where the great 1906 earthquake began," says the first sign on the self-guiding Earthquake Trail, an easy ¾-mile walk. It loops

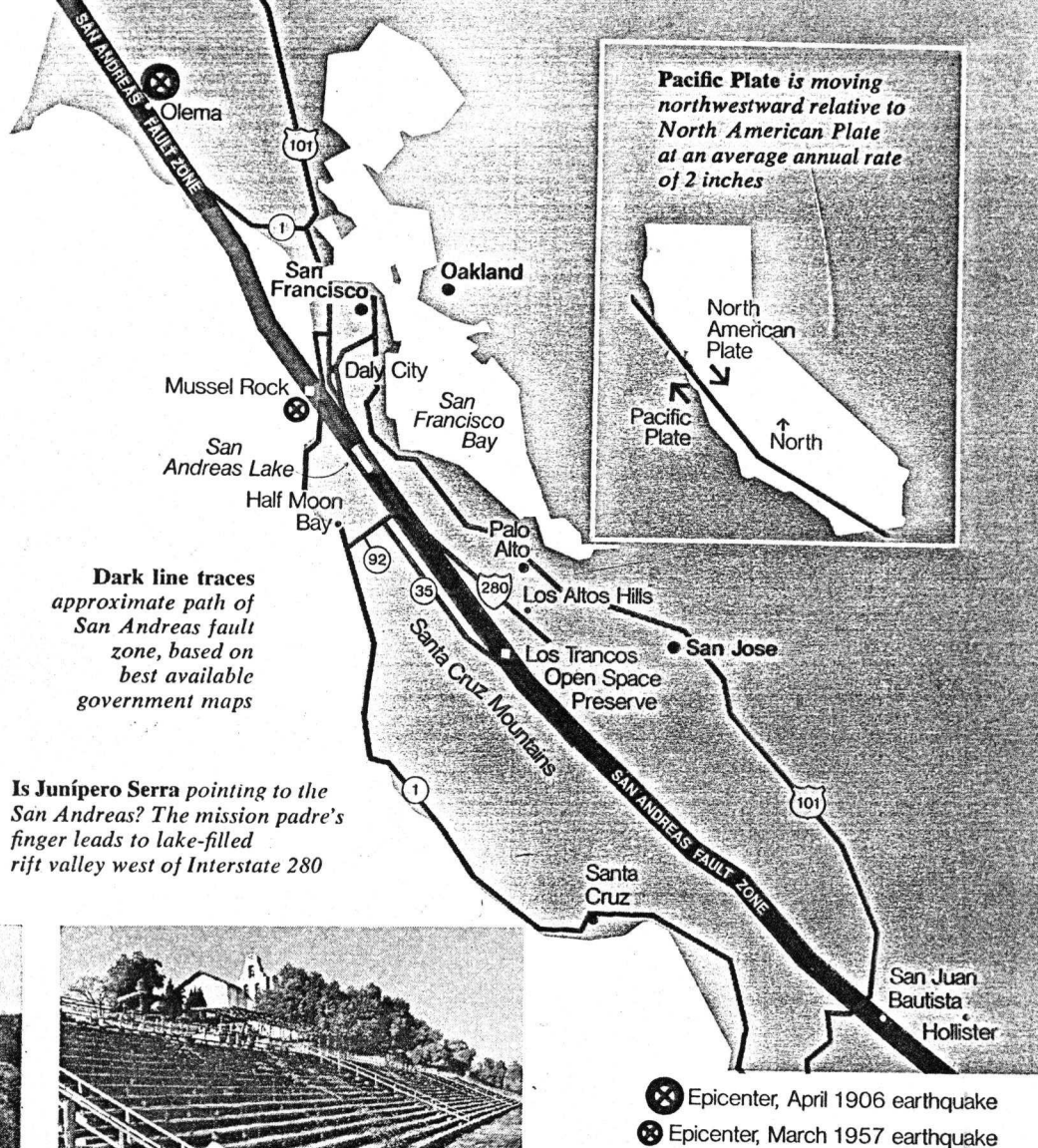
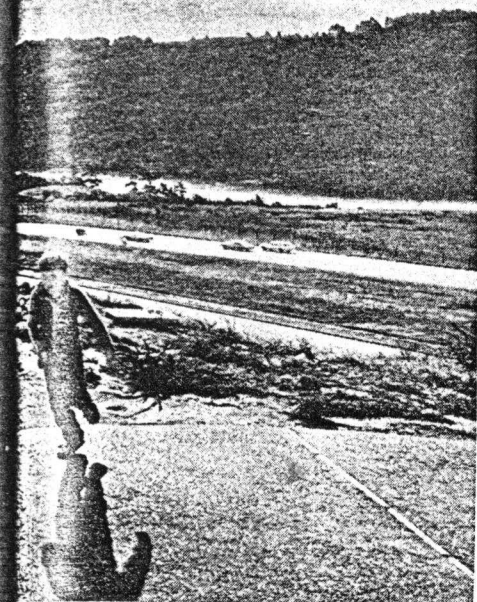
around part of the old ranch that now serves as headquarters for Point Reyes National Seashore.

The 1906 quake hit this area hard, causing major ground shifting and ruptures (a cow is rumored to have been entombed in one). Signs at 18 trail stations point out fault-caused features. Before or after your walk, stop in the visitor center for a look at the seismograph and its seismograms of recent tremors.

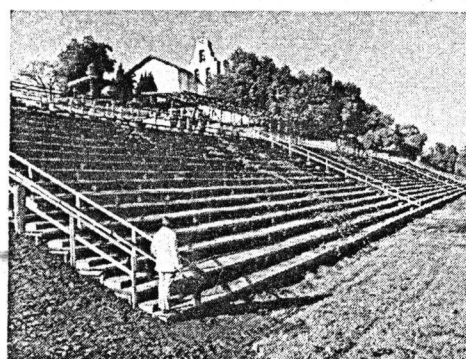
Bear Valley Visitor Center (open daily 8 to 4:30; to check roads, call 415/663-1092) is just west of State 1 at Olema.

Mussel Rock, Daly City. Here, where the San Andreas breaks out of the San Francisco Peninsula to run beneath the Pacific, the fault zone is gouged by a massive slide area. Jutting out from the beach is Mussel Rock, near the epicenter of the March 1957 quake (5.3 magnitude) that damaged homes in Daly City.

From State 1 (Cabrillo Highway) in Pacific Manor (Pacifica), exit on W. Manor



V-shaped gouge in cliff marks fault zone where it exits Daly City at Mussel Rock; note houses near rim



Front-row seats on the fault line: rodeo grandstand runs along fault scarp slope below Mission San Juan Bautista

Drive, then drive north on Palmetto Avenue to the public parking area at road's end. Landfill overlies the fault; expect some soggy ground.

Fault-line drive. For some 15 miles between San Bruno and Woodside, Interstate 280 parallels the fault as it splits the San Andreas rift valley. Much of the way, the fault is covered by the water of three long reservoirs: San Andreas Lake and Upper and Lower Crystal Springs Reservoirs. Signed turnoffs lead to vista points; you'll find Father Serra at one.

Los Trancos. High above Palo Alto in

Los Trancos Open Space Preserve, the ½-mile San Andreas Fault Trail loops around the 1906 rupture zone. Thirteen stations, keyed to a self-guiding brochure, locate examples of fault action, including sag ponds. Much of the trail is shaded by trees and edged by poison oak. From I-280, take Page Mill Road west. The parking area is 1 mile east of Skyline Boulevard on Page Mill. Pick up the brochure at the trailhead, or join a docent-led walk on Sundays at 2 P.M.

Foothill College detour. At the Electronics Museum of Foothill College in Los Altos Hills, exhibits explain plate tectonic theory and the Richter scale. By tramping on a pedal, you register your own micro-temblor on a seismograph. From Los Trancos, drive down Page Mill Road, then bear right on Moody Road; follow it to the college. From I-280, exit west on El Monte Road; turn right on Foothill College Road. The museum is open weekdays 9 to 4:30 and

Sunday 1 to 4:30; admission is \$1 for adults, 25 cents for children.

San Juan Bautista. California's Spanish heritage and geologic history rub shoulders here. The mission church (founded in 1797) overlooks a 40-foot-high scarp created by the fault.

The 1906 quake badly shook the mission; photographs in its museum show the damage. Outside the church, a geology exhibit includes a seismograph. Just beyond, rodeo grandstand seats sit directly on the scarp slope.

From U.S. 101, drive east on State 156; follow signs to the mission. Its museum is open daily 9:30 to 5:30 (50 cents).

Further fault finding. The entire San Andreas is traced in the *Sunset* book *Earthquake Country*, by Robert Iacopi (Lane Publishing Co., Menlo Park, Calif., 1971; \$5.95). For quake safety measures to take at home, see page 104 of the March 1982 *Sunset*. □