

Southern California Earthquake Rattles a State Wary of the 'Big One'

By Tim Arango and Thomas Fuller

July 6, 2019

LOS ANGELES — In the bottom of the fourth inning, Dodger Stadium swayed. Rides at Disneyland were evacuated, and so were movie theaters in Los Angeles. Near Palm Springs, pools sloshed and chandeliers at a casino rocked. And in the Mojave Desert town of Ridgecrest, Calif., fires roared, power went out and grocery store shelves came crashing down.

For the second time in two days, a powerful earthquake struck Southern California on Friday night, shaking a large area already on edge, from Las Vegas to Sacramento to Los Angeles to Mexico, rattling nerves and disrupting plans on a holiday weekend. There were no reports of fatalities and no significant damage to infrastructure, but as day broke rescue crews were still surveying damage in Ridgecrest, near the earthquake's epicenter, and putting out fires.

The 7.1-magnitude earthquake that rattled Southern California on Friday came one day after the strongest recorded quake there in 20 years — and seismologists warned that more episodes are expected.

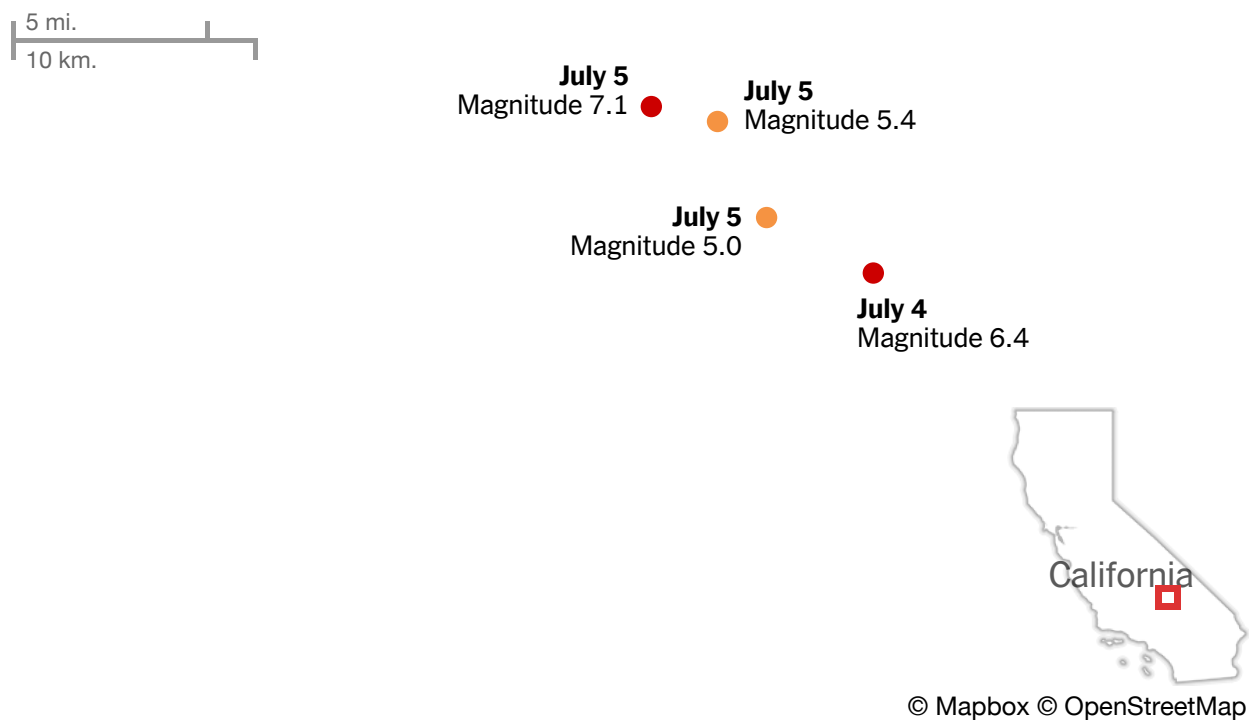
[Sign up for our daily newsletter about news from California here.]

To a large degree, navigating life in California means making peace with Mother Nature. Wildfires and mudslides are yearly events, made worse in recent years amid climate change. But Californians live in constant

awareness, if not outright fear, of the possibility of a devastating earthquake — the “Big One,” as everyone says. And so as people across Southern California woke up Saturday morning grateful for being spared this time, there was the sense that Friday night’s temblor could have been just a foretaste of something bigger. Officials were urging residents to keep supplies handy — batteries, flashlights, a pair of sneakers — if they hadn’t already.

“Don’t be paralyzed by fear,” Josh Rubenstein, the spokesman for the Los Angeles Police Department, wrote on Twitter. “Arm yourself with knowledge and a plan. Talk about what you would do when a big one hits. I myself just did that with my daughter and my wife.”

Major Quakes Since July 4



Source: U.S. Geological Survey • By The New York Times

The United States Geological Survey reported that the latest earthquake’s epicenter was in the Mojave Desert, 11 miles from Ridgecrest — near where a 6.4-magnitude quake had hit about 36 hours earlier. Since Thursday’s

earthquake, the area had been jolted by rolling aftershocks, including one of a 5.4 magnitude that had roused Californians on Friday morning.

“Hold on, it’s going again,” Jade Alexander, the manager of the Rodeway Inn & Suites in Ridgecrest, about 150 miles northeast of Los Angeles, said in a phone interview after another aftershock on Friday night. She said the aftershocks had been coming every five minutes.

Although the area where the earthquake struck is sparsely populated, the navy has a weapons-testing facility, the Naval Air Weapons Station China Lake, just outside Ridgecrest.

“It’s constant,” said Ms. Alexander, whose hotel in Ridgecrest is less than a five-minute drive from the naval station. “My anxiety level is over the limit.”

“The floor is cracked,” she added, saying that bookshelves, lockers and televisions had been thrown to the ground.



The aftermath of a rockslide in Kern County, Calif., caused by the earthquake on Friday.

Lisa Walker/Social Media via Reuters

The quake, which struck at about 8:20 p.m. local time, was felt across a much wider area than Thursday's quake, with reports of power failures in Los Angeles and of some damage in San Bernardino County. Gov. Gavin Newsom of California declared a state of emergency for the Ridgecrest area, and is asking for an emergency declaration from President Trump so federal funds can be made available.

In a news conference late Saturday morning, Mark Ghilarducci, the director of California's Office of Emergency Services, said power was back on for most of Ridgecrest, but warned that hot weather and winds forecast for the coming days would heighten the risk of wildfires. And Kern County Fire Chief David Witt said that it appeared that no buildings had collapsed.

Lucy Jones, a seismologist, said during a Friday night briefing by the United States Geological Survey that there would be more aftershocks. “It is clearly an energetic system,” Dr. Jones said.

Leena Panchal, a manager of Americas Best Value Inn & Suites, another hotel in Ridgecrest, said people had rushed outside because they had felt unsafe being indoors.

“It was so bad,” she said of Friday’s earthquake and its aftershocks. “I am scared. I have two children and no one is taking care of us.”



A cracked road in Trona, Calif., after the earthquake on Saturday.

Jenna Schoenefeld for The New York Times

Ms. Panchal was seated during the earthquake but said that the shaking had been so violent, it would have been impossible to stand up. Standing lamps were thrown to the ground.

At 8:21 p.m., the Los Angeles Fire Department issued an earthquake alert via Twitter.

“Prepare For Aftershocks,” the department said. “When Shaking Starts: DROP, COVER, HOLD ON!”

In Los Angeles, fire officials reported localized power failures and downed wires in several city neighborhoods, but said that no major damage to infrastructure had been identified.

In San Bernardino County, fire officials said that there had been more damage from the Friday night earthquake than from the one the day before. The officials reported that homes had shifted, foundations had been cracked and retaining walls had collapsed.

Tom Heaton, an earthquake expert at the California Institute of Technology, said the earthquake Friday night appeared to have taken place northwest of Thursday’s earthquake. The rupture was about 10 to 15 miles long, and the duration of the earthquake was around seven seconds. Friday’s earthquake was much larger than Thursday’s; the total energy released was about eight times greater.



A destroyed house due to an earthquake in Trona near Ridgecrest, Calif., on Saturday.

Etienne Laurent/EPA, via Shutterstock

For now the earthquakes appear to be localized. But for California, one big question is whether these earthquakes occurring in the Mojave Desert will have any consequences for a potentially more catastrophic rupture of the San Andreas fault, the giant crack in the earth that runs along almost the entire length of the state near heavily populated areas.

Seismologists say there is a remote connection between the system of faults that caused this week's earthquakes and the San Andreas. The faults near Ridgecrest come close to a fault known as the Garlock, which ultimately intersects the San Andreas.

Dr. Heaton said it would be “pretty far-fetched” that an earthquake on the San Andreas would be triggered along this route.

But, he noted, seismologists are constantly surprised.

[Buildings Can be Designed to Withstand Earthquakes. Why Doesn't the U.S. Build More of Them?]

The current sequence of earthquakes could potentially last for years. In the 1970s, seismologists were surprised that an earthquake near Bishop, Calif., began a sequence of temblors around Mammoth Lakes that eventually spread over a diameter of more than 50 miles and included a half-dozen earthquakes of more than 6.0 magnitude. That sequence lasted around a decade.



Anne Sue Eldridge sitting among the items that fell over in her home during the earthquake.
Jenna Schoenefeld for The New York Times

When a significant earthquake is followed by a related and larger one — as has happened in California in recent days — seismologists refer to the first event as a foreshock. A foreshock and a main quake usually occur within days or weeks of each other, but occasionally in analyzing seismic activity in a region, scientists will identify foreshocks that occurred months or even years before a major quake.

Some notable earthquakes have been preceded by foreshocks, including the largest quake ever recorded, a 9.5-magnitude event that struck Chile in 1960. A 7.9-magnitude quake had occurred in the same area the day before. The 2011 Tohoku earthquake in Japan, which led to the Fukushima nuclear disaster, was preceded by a foreshock as well.

[San Francisco's Big Seismic Gamble]

The 6.4 Ridgecrest foreshock on Thursday was followed by seven quakes of magnitude 4.5 or higher until the 7.1-magnitude one on Friday. And the Friday quake so far has been followed by 15 of 4.5 magnitude or higher.

The largest known earthquake in the area occurred in 1872 and was a magnitude 8, one of the largest in California.

Enrique Lugo, 27; his wife, Irma Ponce, 36; and her 16-year-old son, Alex, were stocking up on groceries in their white truck outside a Stater Brothers grocery in Ridgecrest on Saturday. Ms. Ponce said she was grateful that her house sustained just minor damage to an outside brick wall, a broken water heater and ceiling fans that dropped to the floor.



An employee cleaning an aisle floor scattered with toppled bottles in a convenience store in Ridgecrest, Calif., on Saturday. Mario Tama/Getty Images

Ms. Ponce was at home with her son cooking dinner when the quake hit. “We ran outside and so did the neighbors,” she said. The small family had slept in the living room bracing for another major quake Friday night. The couple said they had little sleep because of the aftershocks. “They just didn’t stop,” Ms. Ponce said.

Mr. Lugo, a supervisor, at a chemical plant, said he was on top of a water tank when the largest quake hit.

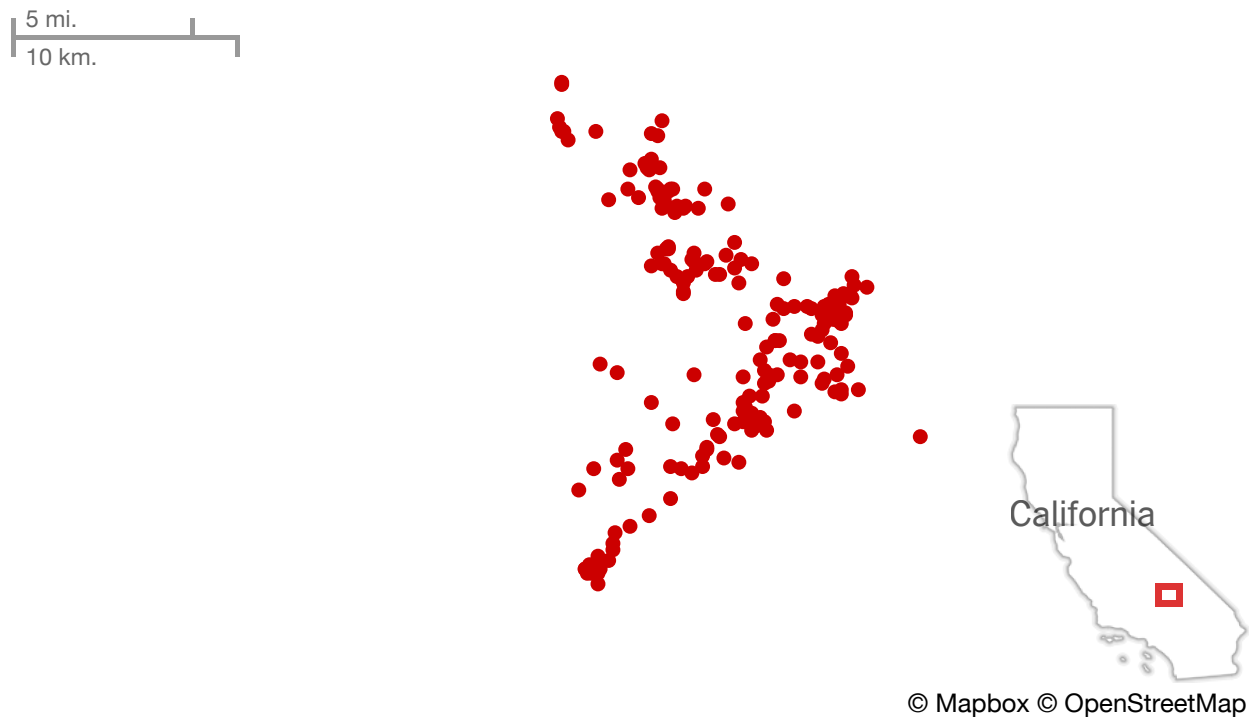
“I just held on to the railing,” said Mr. Lugo, who was born in Ridgecrest. “In my 27 years, I have never experienced an earthquake this big here. We weren’t expecting a bigger one, nobody was.”

Friday night's earthquake came during the Dodgers home game against the San Diego Padres in Los Angeles. The game was not interrupted. But in Las Vegas, where an N.B.A. summer league game was taking place between the New York Knicks and the New Orleans Pelicans, the action was halted because of the quake.

Frank Jackson, the Pelicans' point guard, was bringing the ball up the court when he felt the earthquake.

California Earthquake Aftershocks

Aftershocks since a 6.4-magnitude earthquake on July 4. Through July 5.



Source: U.S. Geological Survey • By The New York Times

“That was crazy,” Jackson said. “I felt like someone was pushing my hip — I kind of leaned this way and was like, ‘Oh my gosh, what is going on?’ And then I saw everything shaking.”

Tim Dorcey of Santa Monica noticed something was amiss when the wine bottles in his home began rattling on Friday night. “That happened and I thought, ‘Oh, aftershock,’” Mr. Dorcey said by phone. “And then it stopped. Fifteen seconds later, it started going again. I hopped up and got away from my windows.”

Mr. Dorcey said the shaking had begun again and gone on for a minute. “It kept getting stronger and stronger,” he said.

Giovanna Gomez of Bakersfield said Friday’s earthquake had felt like Thursday’s quake.

“I was in my living room with my parents, and all of a sudden we started feeling the earth slowly moving,” Ms. Gomez said. “And then it started getting bigger, just rocking back and forth.” She said the family had promptly gone outside and reported no damage, but complained of dogs barking.

At the Dodgers game, fans in the upper decks felt the stadium sway, and viewers at home who did not feel the earthquake themselves were alerted to it by the shaking up and down of the camera. On the field, though, the game went on.

“How are they continuing to play baseball?” said Joe Davis, a Dodgers television announcer.

Tim Arango reported from Los Angeles, and Thomas Fuller from San Francisco. Reporting was contributed by Henry Fountain, Neil Vigdor and Derrick Bryson Taylor from New York; Scott Cacciola from Las Vegas; Jill Cowan from San Diego; and Ana Facio-Krajcer from Ridgecrest, Calif.

A version of this article appears in print on July 6, 2019, on Page A1 of the New York edition with the headline: Southern California Trembles, as Do Its Residents

[READ 281 COMMENTS](#)