

Sun, moon trigger some San Andreas quakes



Researchers believe tidal forces play a role in the timing of small, deep earthquakes along the San Andreas fault. Photo/U.S. Geological Survey

By Rosanna Xia, Los Angeles Times

The gravitational tug between the sun and moon is not just a dance of high and low tides: It can also trigger a special kind of earthquake on the San Andreas fault.

This phenomenon has fascinated scientists for years. Like sea levels, the surface of the Earth also goes up and down with the tides, flexing the crust and stressing the faults inside. Further study found that during certain phases of the tidal cycle, small tremors deep underground – known as low-frequency earthquakes – were more likely to occur.

“It’s kind of crazy, right? That the moon, when it’s pulling in the same direction that the fault is slipping, causes the fault to slip more – and faster,” said Nicholas van der Elst, a U.S. Geological Survey geophysicist and lead author of a new study on the subject published Monday in the Proceedings of

the National Academy of Sciences. “What it shows is that the fault is super weak – much weaker than we would expect – given that there’s 20 miles of rock sitting on top of it.”

Read the whole story