

California shaking, but no cause for concern

* 29 July 2006

* Reproduced with permission from New Scientist: <http://www.newscientist.com/>

* Article link: <http://www.newscientist.com/channel/earth/mg19125622.800.html>
(subscription)

A magnitude 5 earthquake struck near the junction of three tectonic plates in northern California, though experts are somewhat blasé about the activity

A MAGNITUDE 5 earthquake struck near the junction of three tectonic plates in northern California last week. The offshore quake was centred 13 kilometres west of the town of Petrolia.

Despite being the state's most seismically restless region, scientists are somewhat blasé about this activity. They are more interested in "silent" earthquakes and episodic tremors, which could help predict the next "big one" to hit the Cascadia region which includes northern California.

Surface GPS measurements in Japan and Cascadia show that relatively large "earthquakes" - some equivalent to magnitude 6 or 7 – can occur along subduction zones without setting off a single seismometer. These silent earthquakes release their energy stealthily over weeks rather than seconds. They may be linked to very low frequency tremors that have also been detected in these areas, some with nearly annual recurrence. Episodic tremors last occurred in September 2005 in Cascadia, and more are expected within months.

Studies of silent earthquakes in Hawaii suggest that they can trigger a flutter of small earthquakes, a possible sign that a larger one is imminent. Silent quakes and tremors may help explain plate motions at greater depths, but the role of these phenomena is "far from settled", says Paul Segall of Stanford University in California.

To study silent quakes and tremors, the west coast of North America is expected to be dotted with more GPS units and strain meters as part of the Plate Boundary Observatory project.