

A major 8.0 magnitude earthquake jolted the Solomon Islands generating a local tsunami.

Latest reports suggest that between 60 to 70 homes have been damaged by waves in at least four villages on the Santa Cruz Islands.



The destroyed Venga village following a tsunami in Temotu province, Solomon Islands. Solomon Islands authorities say at least four people are missing and presumed dead. Waves up to 5 feet hit the western side of Santa Cruz Island and damaged up to 80 properties.

(AP Photo / World Vision)

SOLOMON ISLANDS **update**

February 6, 2013

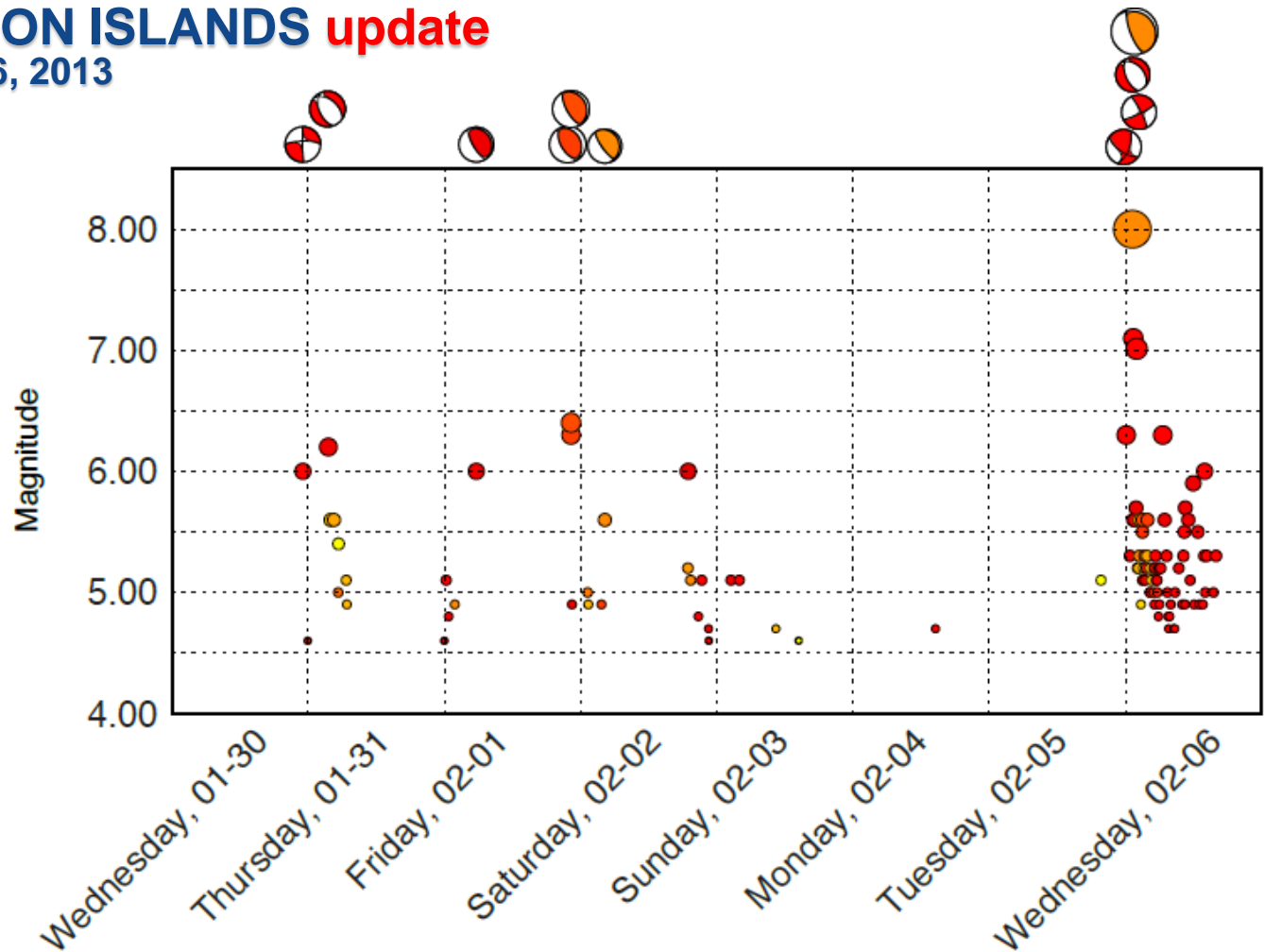
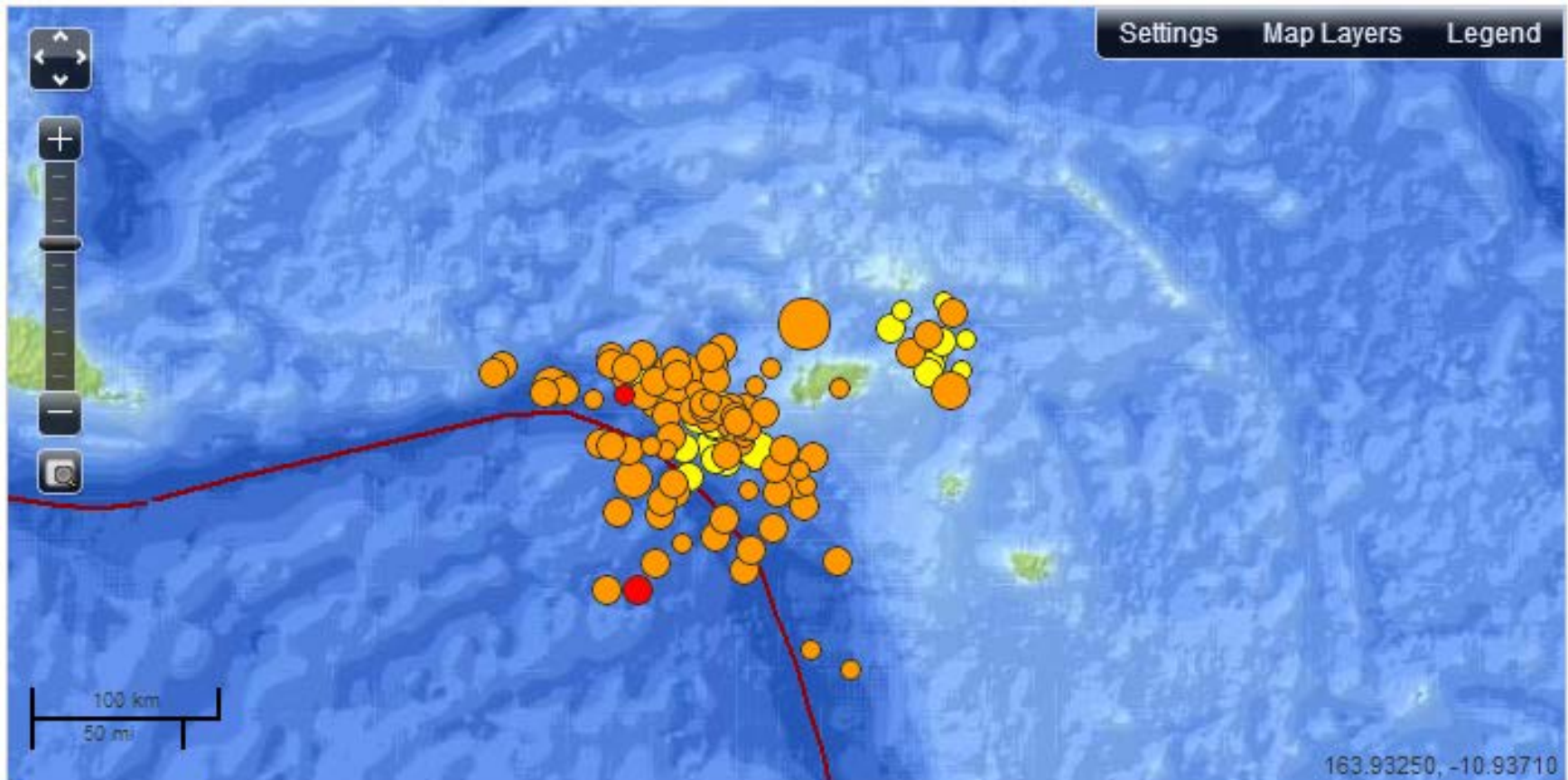


Image courtesy of the US Geological Survey

Over the preceding 7 days, there have been 34 earthquakes in the mapped region that may now be considered “foreshocks” of this magnitude 8.0 main shock. The largest foreshock was a magnitude 6.4 event on February 1 at 22:18 UTC, a little over 4 days before the main shock.

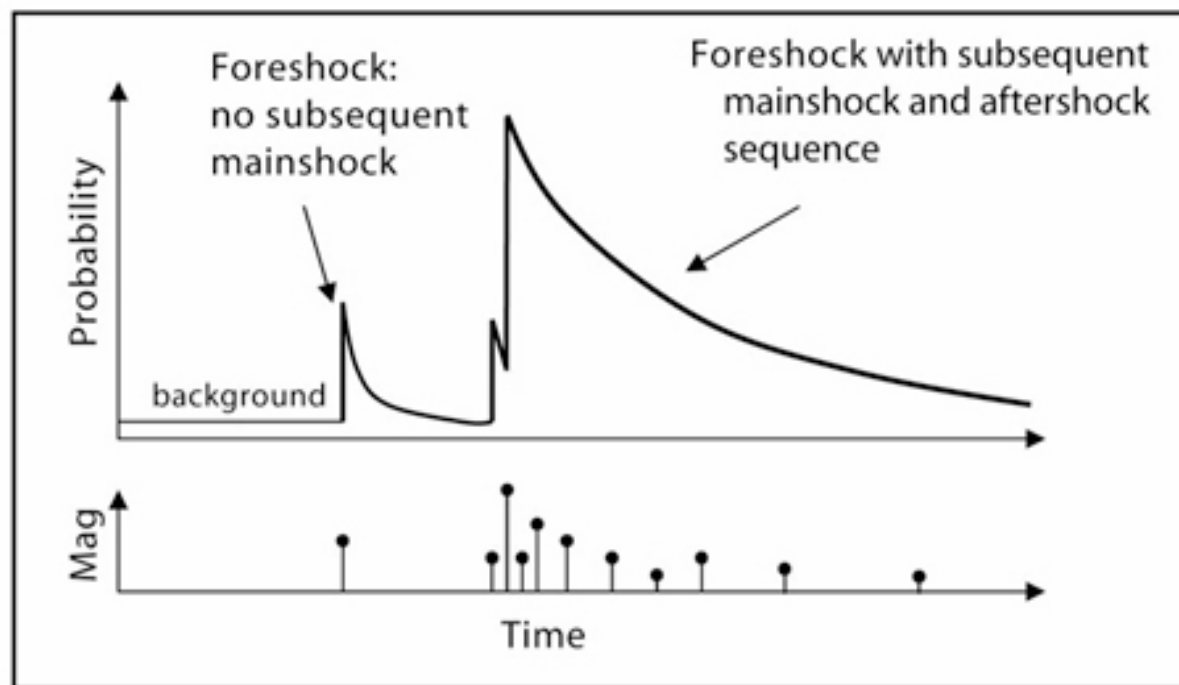


Since the earthquake, there have been over 114 aftershocks (plotted below), the largest a magnitude 7.0.



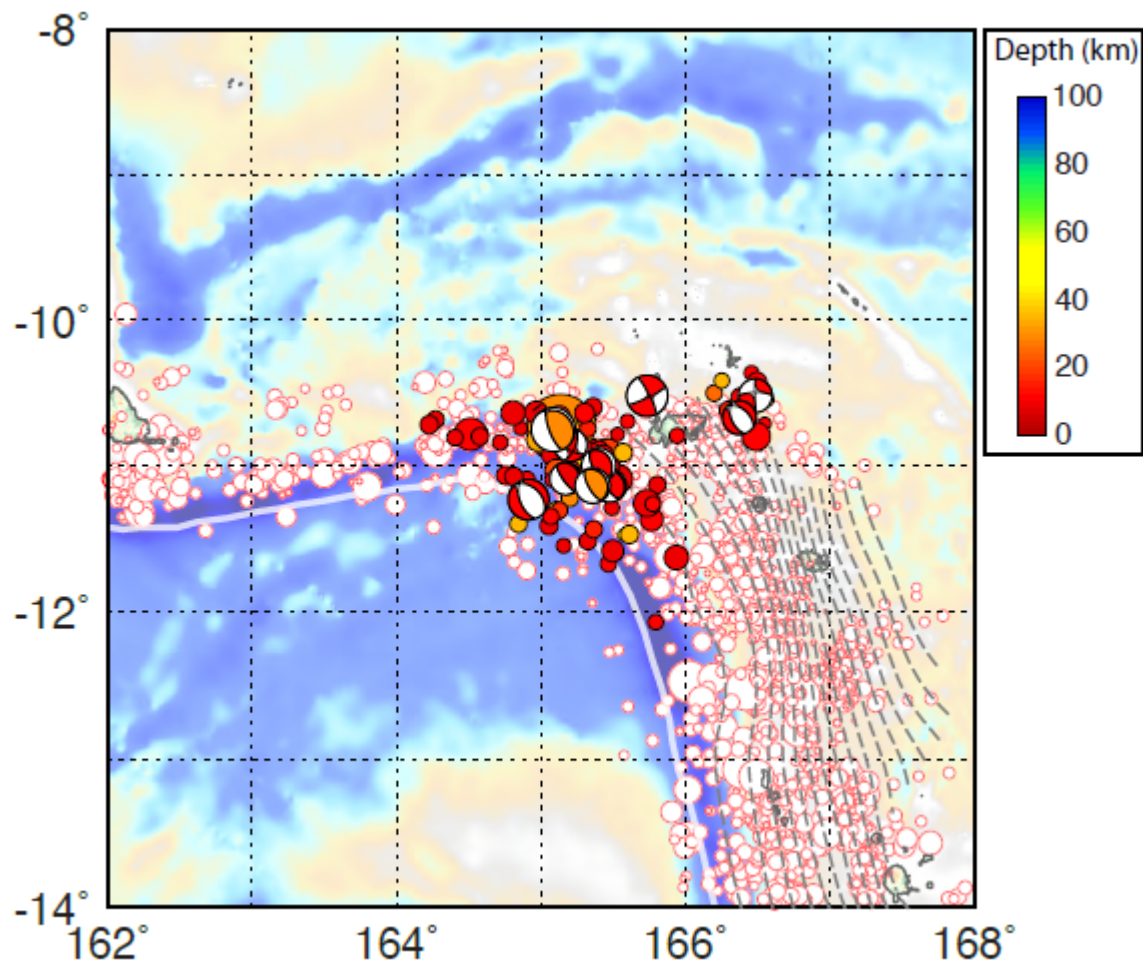
Aftershocks

Aftershock sequences follow predictable patterns as a group, although the individual earthquakes are themselves not predictable. The graph below shows how the number of aftershocks and the magnitude of aftershocks decay with increasing time since the main shock. The number of aftershocks also decreases with distance from the main shock.



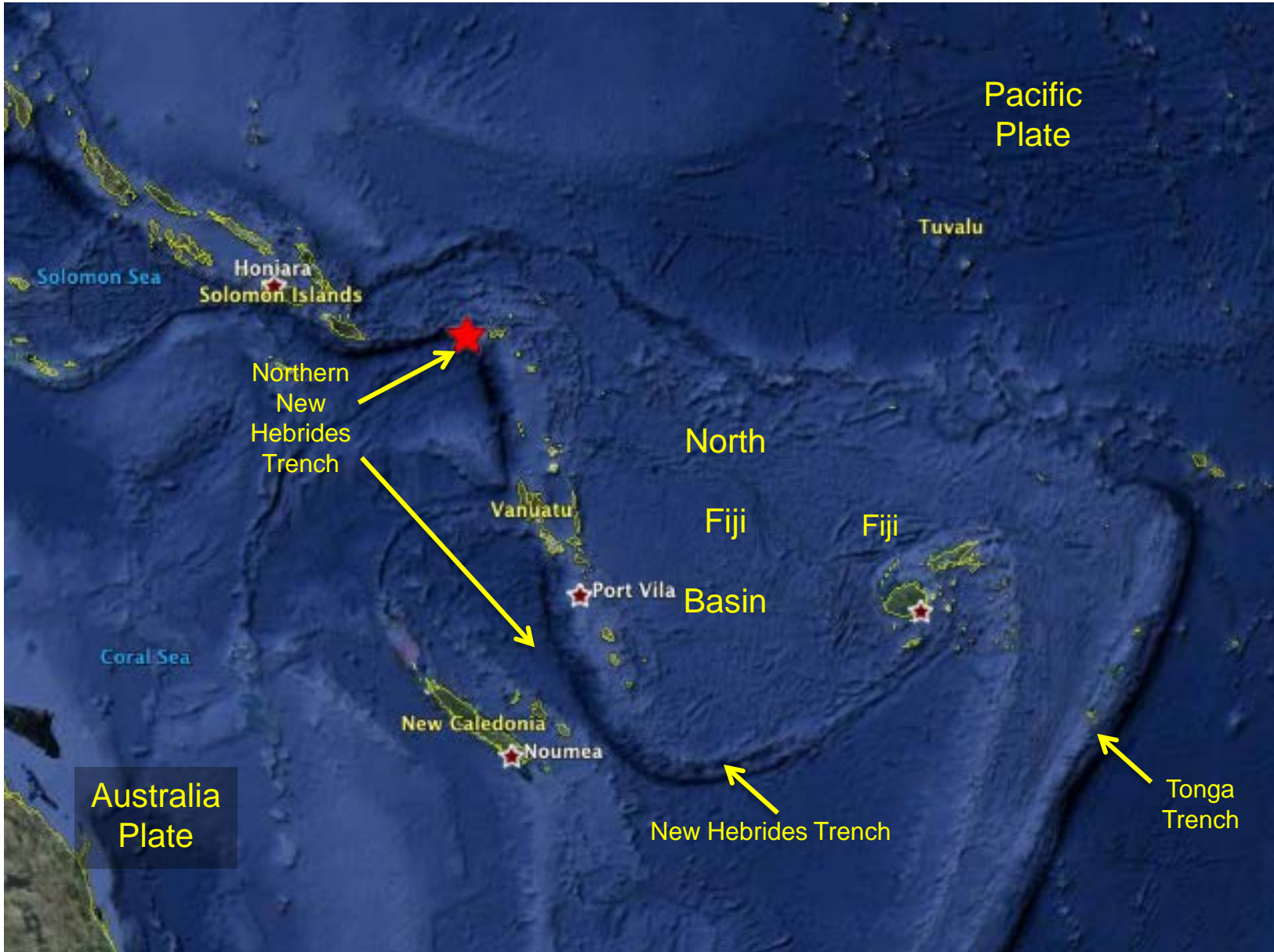
Faulting mechanisms for both the foreshocks and aftershocks suggest a mixture of strike-slip, normal and thrust faulting events.

Earthquake locations and USGS W-phase moment tensors are plotted on the map with the color indicating depth.



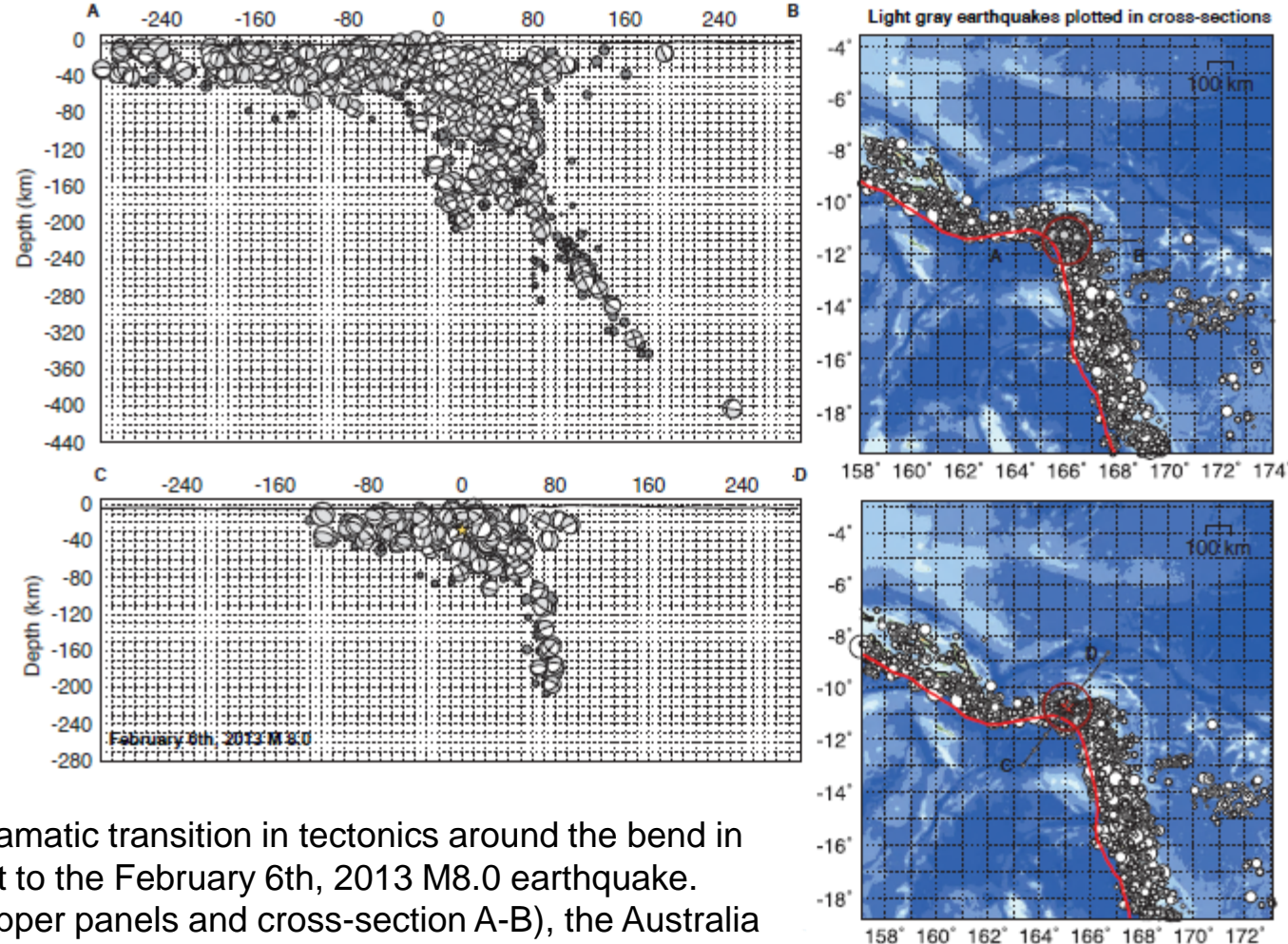
SOLOMON ISLANDS **update**

February 6, 2013



SOLOMON ISLANDS **update**

February 6, 2013



This figure illustrates the dramatic transition in tectonics around the bend in the plate boundary adjacent to the February 6th, 2013 M8.0 earthquake. South of this earthquake (upper panels and cross-section A-B), the Australia plate subducts beneath the Pacific at the Northern New Hebrides (Vanuatu) Trench. The location of the February 6th earthquake (lower panel, cross-section C-D. 02-06-13 earthquake marked as a star) is very close to what could be considered the edge of the Vanuatu slab

Further west the plate boundary is oriented approximately W-E, plate motion is nearly parallel to the boundary, and fault motion is dominantly strike-slip.

