



The AD 365 giant earthquake and tsunami in the Eastern Mediterranean

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The recent giant earthquakes bring back to the scene the AD365 Eastern Mediterranean earthquake of minimum magnitude 8.5. This was the most famous earthquake in antiquity, and is interpreted to have caused an up to 9m uplift in Crete, widespread damage inferred from archaeological and historical data, and a major tsunami which is supposed to have destroyed Alexandria (Egypt).

Understanding the effects and modeling the causative fault of this earthquake are difficult tasks, and matters of debate. The main reasons are: (1) the uplift and tilting of Crete were preceded by episodes of flat-topped subsidence, while a >70km deep fault is necessary to match observed coastal changes, (2) despite the fascinating descriptions of repeating ancient authors, the ancient tsunami remains questionable on literary and archaeological grounds in various suspect areas (Libya, Croatia, Alexandria), while at least three major earthquakes are necessary to explain observed damage on the grounds of earthquake engineering, (3) no signs of a great tsunami generated by a fault south of Crete exist in critical areas on the grounds of geology, and in some cases there is evidence excluding this possibility.

A likely explanation is that a giant earthquake offshore Crete in AD365 did not produce any tsunami, but a tsunami, destructive along the coast east of Alexandria, was somewhat associated with one of the major shocks of the AD365 seismic sequence which was apparently responsible for the destruction of west Cyprus.