

In the Greek isles, a volcano has awakened

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In 1650 B.C.E., a series of massive volcanic eruptions decimated the ancient seafaring Minoan civilization. Over the next 4 millennia, the largely subaquatic Santorini caldera had a series of smaller eruptions, with five such events within the past 600 years, and ending most recently in 1950. From the air, the Santorini caldera appears as a small cluster within the larger collection of Greek islands in the southern Aegean Sea. Following a 60-year lull, Santorini woke up on 9 January 2011 with a swarm of low-magnitude earthquakes.

A GPS [monitoring system](#) installed in the area in 2006 gave Newman et al. a stable background against which to compare the effects of the reawakened volcano. By June 2011 the regional GPS stations showed that they had been pushed 5–32 millimeters (0.2–1.3 inches) farther from the caldera than they had been just six months earlier. Following these initial results, the authors bolstered the GPS network and conducted a more extensive survey in September 2011, which confirmed that the land near the volcano was swelling. Continued monitoring from September through January 2012 showed the expansion was accelerating, reaching a rate of 180 mm (7 in) per year.

Using a model that interpreted the source of the deformation as an expanding sphere, the authors suggest that the expansion is due to an influx of 14.1 million cubic meters (498 million cubic feet) of magma into a chamber 4–5 kilometers (2.5–3.1 miles) below the surface. The authors suggest that the ongoing expansion is not necessarily the signal of an impending eruption, adding that the recent swelling represents only a fraction of that which led to the Minoan eruption. However, they warn

that even a small eruption could trigger ash dispersion, tsunamis, landslides, or other potentially dangerous activity.

More information: “Recent Geodetic Unrest at Santorini Caldera, Greece”, *Geophysical Research Letters*, [doi:10.1029/2012GL051286](https://doi.org/10.1029/2012GL051286), 2012 .

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