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Reference:

Mount Vesuvius & Pompeii: Facts & History

Mary Bagley, LiveScience Contributor | March 13, 2013 02:03pm ET

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Ruins of Pompeii with Mount Vesuvius in the background.

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Mount Vesuvius, on the west coast of Italy, is the only active volcano on mainland Europe. It is best known because of the eruption in A.D. 79 that destroyed the city of Pompeii. Mount Vesuvius is considered to be one of the most dangerous volcanoes in the world due to the large population of the city of Naples and the surrounding towns on the slopes nearby.

The volcano is classed as a complex [stratovolcano](#) because its eruptions typically involve explosive eruptions as well as pyroclastic flows. Vesuvius and other Italian volcanoes, such as Campi Flegrei and Stromboli, are part of the Campanian volcanic arc. The Campanian arc sits on a tectonic boundary where the African plate is being subducted beneath the Eurasian plate.

Under Vesuvius, scientists have detected a tear in the African plate. This “slab window” allows heat from the Earth’s mantle layer to melt the rock of the African plate building up pressure that causes violent explosive eruptions. In the past, [Mount Vesuvius](#) has had a roughly 20-year eruption cycle, but the last serious eruption was in 1944.

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Vesuvius and Pompeii

Mount Vesuvius destroyed the city of Pompeii in A.D. 79. Because the city was buried so quickly by volcanic ash, the site is a well-preserved snapshot of life in a Roman city. We even have a detailed account of the disaster recorded by Pliny the Younger, who interviewed survivors and recorded events in a letter to his friend Tacitus. [[Related: Pompeii 'Wall Posts' Reveal Ancient Social Networks](#)]



Pompeii was slowly recovering from a major earthquake that rocked the city in February of A.D. 62. The shallow quake, originating beneath Mount Vesuvius, had caused major damage to the springs and piping that provided the city’s water. Reconstruction was being carried out on several temples

Ruins at Herculaneum [Pin it](#)
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and public buildings. The historian, Seneca, recorded that the quakes lasted for several days and also heavily damaged the town of Herculaneum and did minor damage to the city of Naples before subsiding. The major quake was followed by several minor shakes throughout the following years. [[Image Gallery: Pompeii's Toilets](#)]

Because seismic activity was so common in the area, citizens paid little attention in early August of 79 when several quakes shook the earth beneath Herculaneum and Pompeii. People were unprepared for the explosion that took place shortly after noon on the 24th of August. Pliny, watching from the town of Misenum, approximately 13 miles (21 kilometers) from Pompeii, described the massive debris cloud. "It resembled a (Mediterranean) pine more than any other tree. Like a very high tree the cloud went high and expanded in different branches.... sometimes white, sometimes dark and stained by the sustained sand and ashes." In Pompeii, ash blocked the sun by 1 p.m. and the people tried to clear heavy ash from rooftops as it fell at a [rate](#) of about 6 inches (15 centimeters) an hour. [[Image Gallery: Preserved Pompeii — Photos Reveal City in Ash](#)]



Bodies preserved in ash at Pompeii. [Pin it](#)
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Shortly after midnight, a wall of volcanic mud engulfed the town of Herculaneum, obliterating the town as its citizens fled toward Pompeii. About 6:30 a.m. on the following morning, a glowing cloud of volcanic gases and debris rolled down Vesuvius' slopes and enveloped the city of Pompeii. Most victims died instantly as the superheated air burned their lungs and contracted their muscles, leaving the bodies in a semi-curved position to be quickly buried in ash and thus preserved in detail for hundreds of years.

Far away in Misenum, Pliny the Younger and his mother joined other refugees escaping the earthquakes rocking their city. They observed, "...the sea retreating as if pushed by the earthquakes." This was probably caused by a tsunami at the climax of the eruption, which gives us the time frame for historical record. Pliny writes of "black and horrible [clouds](#), broken by sinuous shapes of flaming wind." He describes people wheezing and gasping because of that wind; the same wind that doomed the people of Pompeii.

WWII eruption

On March 18, 1944, a two-week-long eruption began with lava from the summit of Mount Vesuvius. [Soldiers](#) and airmen of the 340th Bomber Group were stationed at the Pompeii Airfield just a few miles from the base of the volcano. Diaries record the awesome sights and sounds they witnessed in this latest major eruption. Guards wore leather jackets and "steel pot" helmets to protect themselves from rains of hot ash and small rocks. Tents collapsed or caught fire when hot cinders were blown over them.

On March 22, they were forced to evacuate, leaving behind 88 Allied aircraft. After the volcano subsided, they returned on the 30th to find the planes were a total loss. [Engines](#) were clogged by ash, control panels were useless tangles of fused wire, canopies had holes from flying rock or were etched to opacity by wind driven ash.

One airman of the 489th Bomber Squadron complained in his diary when Axis Sally broadcast a radio show dedicated to the "survivors" of the Vesuvius eruption (actually the most severe human casualty was a wrist sprained during the evacuation). She told all of Europe that "Colonel Vesuvius" had destroyed all of them. The diarist was justifiably proud of the work he did with his fellows in recovery. By April 15, the planes had been replaced and the 340th Bomber Group was back to full strength and ready to fly missions from their new base. "We are still the best damned Group there is. Hitler, you self styled 'Great Rebuilder' take note!"

Current status

Since 1944, there have been hundreds of minor earthquakes in the region around Mount Vesuvius. The most serious earthquake rocked [Naples](#) in October 1999. The magnitude-3.6 quake was felt as far as 15 miles (24 km) from the base of the volcano and was of the same magnitude as a quake that occurred 17 years prior to the last truly major explosion that devastated Naples in 1631.

— *Mary Bagley, LiveScience Contributor*