

Vesuvius and Pompeii

– An Unbeatable Dramatic Combination of Geology and History



In AD 79, the cataclysmic eruption of the volcano Vesuvius completely buried the towns of Pompeii and Herculanaeum with up to 30 m of ash. The volcanic debris gently preserved the city from decay for almost 1,700 years, so today tourists can wander around the streets of this ancient Roman town, imagining what life must have been like almost 2,000 years ago. Perhaps it is the combination of a devastating natural disaster with the mystery of ancient times that brings more than 2 million tourists to Pompeii every year.

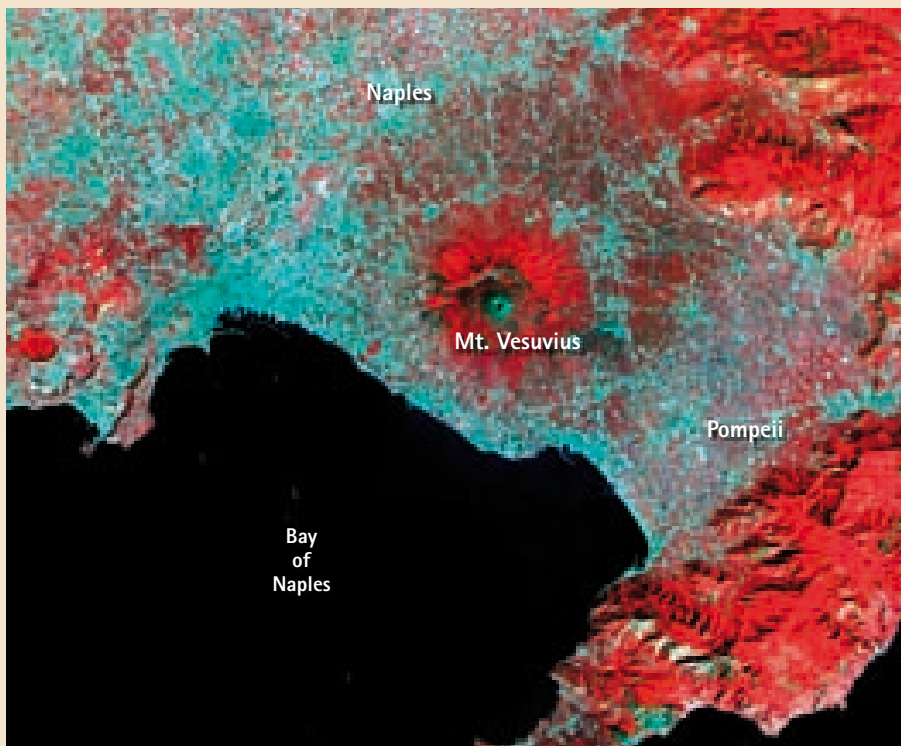


Photo: NASA/GSFC/MET/ERSDAC/JAROS, and U.S./Japan ASTER Science Team

This image of Mt. Vesuvius Italy was acquired September 26, 2000, and covers an area of 36 by 45 km. Vesuvius overlooks the city of Naples and the Bay of Naples in central Italy. Vesuvius is intensively monitored for potential signs of unrest that could signal the beginning of another eruption.



Photo: Berit Løkken

The towns of Pompeii and Herculanaeum were rediscovered in the 18th century, and following excavation in the 20th century they now witness Roman life from 2000 years ago. Hundreds of victims are preserved together with wooden objects and food items.

Berit Løkken and Morten Smelror

The bay of Naples is considered one of the most beautiful parts of Italy. The landscape is peaceful and friendly, with omnipresent Mount Vesuvius as a scenic gentle giant, surrounded by slopes of vineyards and woods. The sun is warm and radiant, and a pleasant breeze drifts in from the Mediterranean. But there is a dark side to all this beauty. Below, deep in the ground, rages an active volcano. In fact, the Vesuvian volcanic complex, which originates from twelve thousand years back in time, was responsible for one of the most disastrous eruptions in the history of man.

At about 1pm on 24th August, a warm summer day in the year AD 79, Mount Vesuvius erupted violently. Terrified people witnessed the volcano spitting out enormous amounts of lava, burning stones, boiling mud, poisonous gases and ashes into the sky as the subterranean channel opened with devastating power. One side of the mountain was torn away for a length of two kilometres. By the end of the following day, thousands of people were dead and the flourishing Roman cities of Pompeii and Herculaneum had disappeared beneath tons of ash, pumice and solidified mud.

Most of what we know about the eruption comes from the Roman writer

Plinius the Younger. In his famous two letters to the historian Tacitus, written 16 years after the disaster, Plinius gives the story which is regarded as the oldest written account of vulcanology. While he witnessed what happened from a safe distance at Capo Miseno, his uncle, the naturalist, writer and Roman officer Pliny the Elder, with his insatiable investigative curiosity, set sail across the Bay of Naples to face the disaster and his own death.

In addition to his observations, Plinius the Younger describes the details of the eruption based on notes taken from those who had accompanied his uncle. These unique documents not only help us to scientifically reconstruct what has become known by specialists as a *Plinian eruption*, they also tells us how terrifying and shocking it was for the witnesses and victims of the disaster: "You could hear women lamenting, children crying, men shouting. There were some so afraid that they prayed for death. Many raised their hands to the gods, and even more believed that there were no gods any longer and that this was one unending night for the world."

Most of the citizens managed to escape, but more than 2,000 were killed. First, pumice 'rain' slowly started to fall, prompting most inhabitants to flee the city. This was followed by a flood of warm ash and gas streaming rapidly down from the mountain. Those who stayed behind were killed. The ash and pumice that covered Pompeii and its inhabitants came to provide a 4 m thick cover, which protected the city for almost 1,700 years.

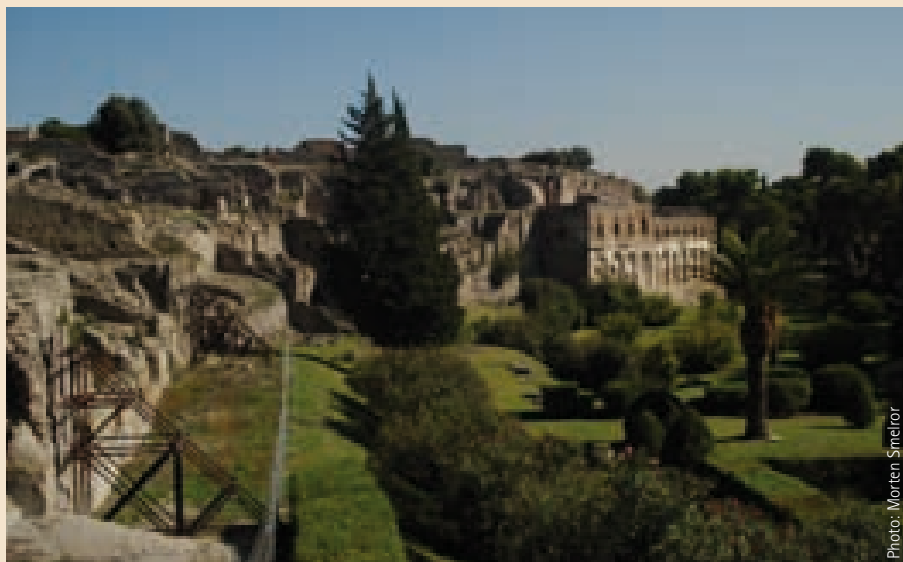
At the time Mount Vesuvius erupted, Pompeii was a wealthy Roman trading town, famous for its fish sauce and its grand villas. It was international and cosmopolitan, with a population which included Greeks, Etruscans, and residents from Africa, in addition to Romans. Of Pompeii's 20,000 inhabitants, half were children.

A Pompeiian Home

The houses of Pompeii generally had an entrance from the street that led through a narrow passageway into an inner courtyard known as an *atrium*, used as a gathering place to welcome guests and entertain children. Usually it contained a pool called an *impluvium* to collect rainwater for various uses. On either side of the atrium, there might be bedrooms, storage rooms or a library of scrolls. If the Roman home had an upstairs, these rooms often had doors or balconies overlooking the atrium.



Doric columns at the Pompeii Forum. As early as the end of the second century, the Roman government had men digging at Pompeii to retrieve large public statues from the forum and to remove building materials for other towns. The salvage work had to be curtailed while Vesuvius violently erupted for seven days in 203 A.D.



There is much information to be gleaned about Roman living arrangements in Pompeii, from the modest dwellings of the simple workmen to the large and magnificent villas with sumptuous decorations of the noble class.

Most homes included a garden (*viridarium*) with plantings, statues and fountains, with water fed through lead pipes. The wealthy Pompeians enriched their homes with elegant gardens decorated with frescoes of plants and flowers and an abundance of modern conveniences.

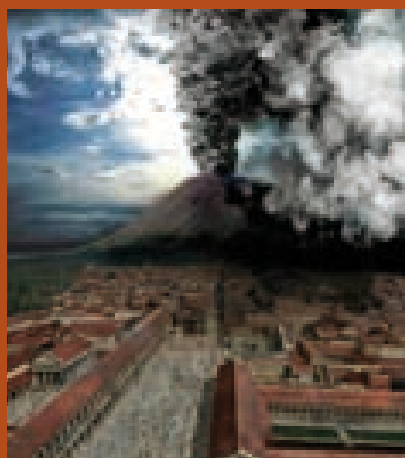
Each room was heated by hot air running through cavity walls and spaces under the floors, while sophisticated hydraulic pumps provided running water. In fact the entire city had an excellent system for the control and distribution of water. From a great reservoir, water flowed through underground pipelines into drainage systems and aqueducts supported by arches. The urban structure of the town was the classic Roman style, with rectilinear and right-angled roads (the *cardines* and *decumani*), paved with Vesuvian stone.

Everyday life

When visiting Pompeii today, the paved streets even now bear the marks of Roman cartwheels, and you still find the public fountains on many street corners, where the

Plinian eruption

A *Plinian eruption* is the ejection of large volumes of ash and pumice in a well-defined eruption column, where the resulting dispersal of pumice covers an area of over 500 km². Coarse pumice pyroclasts from *Plinian* eruptions usually fall within tens of kilometers of the vent area, although the ash particles produced by very energetic eruptions or those carried along with the pyroclastic flows can be found hundreds of kilometres from their source.



The last day of Pompeii, as seen by an artist.



Photo: Berit Løkken

Many of the houses contain the remains of well-preserved frescoes.



Photo: Berit Løkken

In Pompeii there are reminders of death everywhere. In 1863, Giuseppe Fiorelli developed the ingenious technique of making plaster casts of the voids in the ash layer left as the remains of people and animals decomposed, often reproduced in astonishing detail.

inhabitants used to meet and mingle. High footpaths were built on either side of the cobblestone streets, which were crossed by means of large, raised stones because the streets had little drainage. Along the main roads there were taverns and cafes, similar in some ways to our fast food restaurants today. The citizens could leave the public baths and grab a quick something to eat at one of the many early franchises.

The Forum was the administrative and corporate heart of Pompeii. Situated at the end of the main street of Pompeii, this was the centre for politics, religious activities and trade, with huge temples, public buildings, basilicas and all kinds of shops. Although only the ruins can be seen today, one can almost feel the presence of

previous life here, with merchants offering their goods, legal proceedings taking place and people meeting and gossiping. Like all Roman citizens, the Pompeians enjoyed violent entertainment. The remains of a huge amphitheatre, with room for several thousand spectators, is situated in a corner of the city. Here gladiators amused the audience by fighting for their lives.

The public baths were an important part of everyday life for a Pompeian. Beautifully decorated, you can see the remains of these baths today, with the *tepidariums* which were filled with lukewarm water and the *caldarium*, filled with hot water. Slaves would rinse and clean their client's bodies with metal scrapes and give massages with aromatic oils.



Photo: Morten Smelror

The typical streets in Pompeii and other ancient Italian cities were built of paving stones of basalt, a rugged igneous rock. The centre of the road is raised to allow water to run off into the gutters.

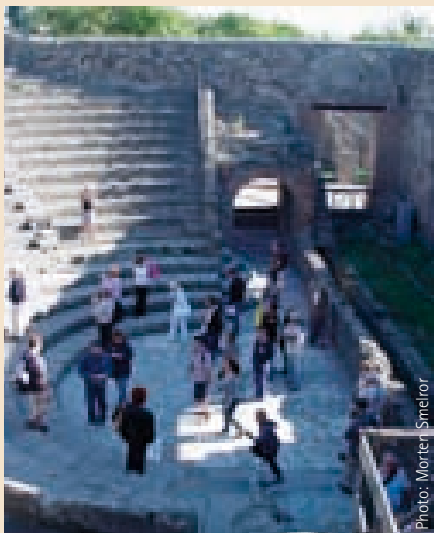


Photo: Morten Smelror

The small theatre, or *Odeon*, had a seating capacity of 1,000 and is among the best preserved of ancient theatres. It originally had a permanent roof to improve the sound quality for musical performances and prose readings.

On your own

The excavations of Pompeii started in 1748, but sloppily and without proper planning at first. Treasure hunters escaped with valuable amphoras, statues and coins. In 1860 the archaeologist Giuseppe Fiorelli became the leader of the excavations, at which point scientific planning and methods were introduced to the excavations. Mapping, cataloguing and restoration of the buildings started. Today Pompeii is one of the oldest and most thoroughly examined archeological sites in the world. A lot of the artifacts found in Pompeii can be viewed in the Museum of Napoli. (<http://www.marketplace.it/museo.nazionale/>).

Going to Pompeii as a tourist today can be a real test of patience. First you queue up to get a ticket, and when finally inside, you follow a stream of tourists along the streets and into the many houses, at each of which you have to wait your turn before entering. Taking pictures without other tourists appearing in them is almost impossible. Nevertheless, a visit to Pompeii is worth the effort. Because of the tourist invasion and also the heat of the warmest summer months, it is recommended to avoid the high season.

For your first visit to Pompeii it is a good idea to join a guided tour through the city. This way you get the best and easiest introduction to the historical facts of this fascinating town. Several tourist agencies offer trips combining a tour around Pompeii with a trip to the top of Mount Vesuvius. For all tourists, Vesuvius, the mountain of Bacchus, and Pompeii, the seat of Venus, comprise a unique site, providing an unbeatable combination of scenic and thrilling nature with the extraordinary, well-preserved remains of an ancient Roman city.

Active Vesuvius

Vesuvius is the only active volcano on the European mainland. The last eruptions were in January to April 1944, during the days of the allied occupation, when the cone of the volcano collapsed some 200m into the crater, creating the large concave summit characterising Vesuvius today.

Prior to this, there had been an almost uninterrupted alternation of eruptive phases and more quiet and stable periods since 1913. During this time, never more than a complete year passed without lava emission, and the volume of material poured out by Vesuvius from 1913-1944 has been calculated at some 250 million cubic meters (equivalent to 1.6 billion barrels, i.e. a giant oil field).

In addition to the famous eruption in the year 79, the historic documents tell us about eruptions in 203, 472, 512, 993, 1036, 1038, 1039 and in 1500. In December 1631 a violent eruption occurred, causing the death of around 4,000 people. Further eruptions followed in 1660, 1737, 1779, 1794, 1822, 1850, 1855, 1858, 1861 and in 1872. This last eruption completely surrounded the Vesuvian Observatory which had been commissioned between 1840 and 1845. The director at that time was the famous Luigi Palmieri, who did not want to abandon the building surrounded by flowing lava, but remained "on duty" to observe what happened.

After this event Vesuvius stayed calm until April 1906, when a new violent eruption took place that significantly changed the shape of the volcano, creating a crater with an internal size of 84 million cubic meters at the top of the majestic mountain.



Image: NASA

The central cone of Vesuvius is the dark purple feature in the center of the volcano. This cone is surrounded on the northern and eastern sides by the old crater rim, called Mt. Somma. Recent lava flows are the pale yellow areas on the southern and western sides of the cone. Dense urban settlement can be seen around the volcano. The city of Naples is above and to the left of Vesuvius. Pompeii is located just below the volcano.

