

The city of Napoli and its active volcanoes

(5 nights-6 days), Dates: 22-27 June ; Leaders: Roberto Isaia; roberto.isaia@ingv.it, Raffaello Cioni; Guido Giordano; Roberto Sulpizio; Participants: 30 -50; Cost: 850 €

Somma-Vesuvius and Campi Flegrei are among the most famous active volcanoes in the world, and are part of the Neapolitan landscape.

The Somma-Vesuvio, east of Napoli, is made up of an older volcano, Mt. Somma, truncated by a summit caldera, resulting from several collapses following Plinian eruption and a more recent cone, Vesuvius. The growth of the Vesuvius cone occurred during periods of persistent low-energy open-conduit activity, the last of which occurred between 1631 and 1944. The activity of the volcano punctuated the human history since Bronze Age, as testified by archaeological finds recognised in the plain and relieves surrounding the volcano. The world-famous eruption of AD 79 consigned the Somma-Vesuvius to the history, because of the burying of some important roman towns like Pompeii and Herculaneum.

The field trip will illustrate the volcanology of main historical eruptions, with special emphasis to the post-1631 activity. The visit to the summit cone will represent the occasion to have a panoramic view of the inner caldera wall. Deposits of the Plinian and subplinian eruptions will be observed in old quarries around the volcano. The AD 79 deposits will be described visiting the archaeological excavations of Herculaneum and Oplontis, in which the interaction of the pyroclastic deposits with an inhabited area will be the argument for discussion about the present day volcanic hazard and risk in the Neapolitan area. The visit to the oldest volcanic observatory in the world (hystorical site of the Osservatorio Vesuviano) will be the occasion to illustrate the born and the history of volcanic surveillance. Within the Maschio Angioino Castle, we will see a sequence with ash deposits from both Vesuvius and Campi Flegrei showing as the city of Naples was exposed to both volcanoes. The itinerary in the Campi Flegrei caldera, will allow to see i) the rocks of the Campanian Ignimbrite and Neapolitan Yellow Tuff caldera forming eruptions, ii) the pyroclastic density currents and fallout deposits of the post caldera volcanism, iii) different preserved volcano edifices and volcano tectonic structures, along with fumarolic and hydrothermal active field are hosted. A visit to the remnants of the Serapeum Roman market and the Pozzuoli harbour, are the best examples to discuss of caldera unrest at Campi Flegrei. The several diverse monitoring stations site at Solfatara and a visit to the Monitoring Centre of the Osservatorio Vesuviano will provide an opportunity to illustrate the surveillance network of the INGV-OV for the Neapolitan volcanoes and discuss on the future eruption scenario and the related risk. A half-day boat trip in the Gulf of Napoli and Pozzuoli, will show the volcano tectonic structure of the whole Campi Flegrei volcanic field and to point out the high density urbanisations of the area.



During the field trip, both at Vesuvio and Campi Flegrei, selected sites will be visited for the enhancement of local products, with food and wine interludes, as well as space will be given for illustrating initiatives carried out on the territory by local authorities and schools for the prevention and mitigation actions of volcanic risks.

Field Trip Campi Flegrei-Vesuvio Planning

- Day 1
Icebreaker party with registration and general introduction to the field trip
- Day 2
Campi Flegrei (general introduction to the CF caldera, caldera-forming eruptions, and the activity of different intracaldera vents)
- Day 3
- *Campi Flegrei (the activity of the western sector, the Solfatara-Pozzuoli area, the long and short term ground deformation, bradyseismic phenomena)*
- Day 4
Somma-Vesuvius (general introduction to the SV activity, the Somma caldera, historical Museum of the Osservatorio Vesuviano and the deposit of the north flank of the Somma Vesuvio)
- Day 5
Somma-Vesuvius (The Pozzelle quarry pyroclastic record of the last 22 ka of SV activity; the AD 79 Pompeii eruption: Oplontis and Herculaneum archaeological excavations)
- Day 6
The deposits of Campi Flegrei and Somma Vesuvio in the city of Naples or Excursion by boat through the Gulf of Naples