

Historical Activity of Mt. Etna and Aeolian Islands

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MT. ETNA

Etna is a very active volcano that has profoundly influenced the lives of people living on its flanks since ancient times. Its activity has been documented since the beginning of recorded history, i.e. from Greek and Roman civilizations, giving volcanologists a uniquely long historical record for an active volcano. The oldest eruption found in the historical sources was reported by Diodoro Siculus as a strong volcanic event that occurred before Greek colonization (734 BC). Due to this eruption, the Sicani inhabitants resettled in a safer region in central Sicily.



Strong explosion at summit crater preceding the Mt. Silvestri eruption in 1892.

In 1669 the most destructive eruption in recent times occurred. People were profoundly affected by this volcanic event: in fact lava flows destroyed the village of Nicolosi (at about 750 a.s.l.), as well as many others, and covered the western part of Catania reaching the Ionian coast. Typical eruptions of Etna produce lava flows that travel hundreds to thousands of meters. The longest lava flow ever recorded was produced by the 1669 eruption, reaching a distance of 16 km from the vent.



Catania before the 1669 eruption.



Catania after the 1669 eruption.

Descriptions of the eruptions in Greek and Roman times are often linked to legends, such as those told by the philosopher Empedocles, or to important historical events, such as Julius Caesar's death in 44 BC. In most cases, information about volcanic activity must be 'translated' from poetic language into hard fact.



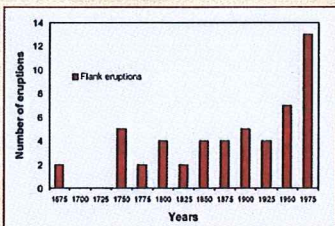
The 1910 eruption of Etna: strombolian activity along the eruptive fissure, located in the southern flank of the volcano. Atti della Reale Accademia dei Lincei 1910.

Some of the flank eruptions were characterized by intense strombolian activity and fire fountaining associated to the lava flow emplacement. This explosive activity formed eruptive columns and copious lapilli and ash fallout on the volcano flanks. Proximal deposits built large scoria cones (e.g. Monti Rossi 1669 eruption, La Montagnola 1763 eruption). Similar activity also occurred during the 2001 and 2002-03 eruptions.



The 1923 Eruption.

Many destructive eruptions have affected the flanks of Etna, destroying villages and lands in the last centuries. In the 20th century the 1928 eruption destroyed the village of Mascali in the eastern flank of Etna. Many other eruptions have threatened several villages, for example Zafferana Etnea in 1991-93, Randazzo in 1981 and Fornazzo in 1978-79.



Flank eruptions occurred after the 1669 eruption. Note the remarkable increasing of the frequency after 1975.

AEOLIAN ISLANDS



The Aeolian archipelago consists of seven islands and several seamounts entirely made up of volcanic products. The island chain extends for about 100 Km offshore the northern coast of Sicily. It represents the emerged part of an arcuate volcanic structure, located in the Southern Tyrrhenian Sea, along the western margin of a distorted sector of the Maghrebic-Appenninic belt, namely the Calabro - Peloritani Arc. Many eruptive episodes of Stromboli and Vulcano are reported in the historical chronicles, while only one took place on the Isle of Lipari in the 6th century A.D.

Map of the Aeolian Islands and of Ustica in the Kitab-i-bahriyye, the pilot book composed in 1521 and 1526 by Piri Re is, Sultan Seliman the Splendid's admiral cartographer. Ms. 3509. Bologna. Biblioteca Universitaria.

LIPARI

At present, the volcanic activity on Lipari is restricted to post-volcanic phenomena, i.e. some low-temperature fumaroles and the hot springs of S. Calogero in the western part of the island with a temperature of 57°C.

The isle is still active. The last eruptive event, represented by the obsidian flow of Rocche Rosse and Forgia Vecchia, and by the mass of pumice of Monte Pelato, was recorded in 6th century A.D.



STROMBOLI



Stromboli is the northernmost island of the Aeolian Archipelago and the only one which is presently in a persistent state of activity. Between 1874 and 1916 the Italian Navy daily visited Stromboli's craters from the Semaforo Labronzo (located 1.7 km north of the craters).

These data, together with many other scientific reports that have been published since the 18th century provide several information not only on the characteristics and on the frequency of the different eruptive phenomena but also on the volcanic risk.



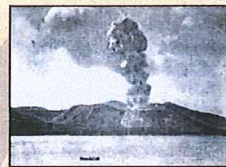
The inside of the Fossa: This island was known since the Classical Age for the rhythmic explosive eruptions of scoria, cinder and ashes. This type of volcanic activity has been described by many authors, and the term "strombolian" has been adopted by volcanologists all over the world to describe this kind of eruption.

VULCANO

Vulcano consists entirely of volcanic rocks and, together with Stromboli, is the only one showing evidence of very recent volcanic activity. Two active volcanic structures, namely La Fossa and Vulcanello, repeatedly erupted during historic times, mostly showing explosive characteristics.



The last "vulcanian" type of eruption occurred at La Fossa Cone in 1888-90. Numerous historical reports, since Greek and Roman times refer to the activity of this volcano, but only the last eruption occurring in 1888-1890 has been described in detail - Mercalli & Silvestri, 1891.



Explosion of Vulcano seen off-shore during the eruption of 1888-90. From G. Mercalli and O. Silvestri, (1891) Le eruzioni dell'isola di Vulcano 1888-90.

An explosion during the eruption of 1888-90. From G. Mercalli and O. Silvestri, (1891).

