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La Palma Earthquakes

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Abstract

In September 2021, a significant jump in seismic activity on the island of La Palma (Canary Islands, Spain) signaled the start of a volcanic crisis that still continues at the time of writing. Earthquake data is continually collected and published by the Instituto Geográfico Nacional (IGN). ...

Plain Language Summary

Earthquake data for the island of La Palma from the September 2021 eruption is found ...

1 Introduction

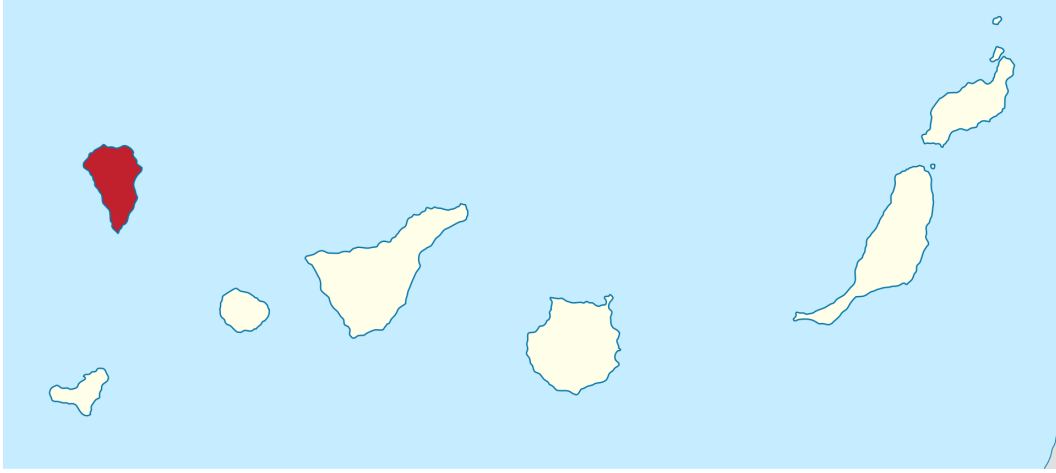


Figure 1: Map of La Palma

La Palma is one of the west most islands in the Volcanic Archipelago of the Canary Islands Figure 1.

Table 1: Recent historic eruptions on La Palma

Name	Year
Current	2021
Teneguía	1971
Nambroque	1949
El Charco	1712
Volcán San Antonio	1677
Volcán San Martin	1646
Tajuya near El Paso	1585
Montaña Quemada	1492

Table 1 summarises the eruptions recorded since the colonization of the islands by Europeans in the late 1400s.

The probability of a future eruption can be modeled by a Poisson distribution Equation 1.

$$p(x) = \frac{e^{-\lambda} \lambda^x}{x!} \quad (1)$$

19 Where λ is the number of eruptions per year.

20 Studies of the magma systems feeding the volcano, such as Marrero et al. (2019) has
 21 proposed that there are two main magma reservoirs feeding the Cumbre Vieja vol-
 22 cano; one in the mantle (30-40km depth) which charges and in turn feeds a shallower
 23 crustal reservoir (10-20km depth).

24 **2 Data & Methods**

25 **3 Conclusion**

26 **References**

27 Marrero, J., García, A., Berrocoso, M., Llinares, Á., Rodríguez-Losada, A., & Ortiz,
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 30 *Applied Volcanology*, 8. <https://doi.org/10.1186/s13617-019-0085-5>