Reply to Comment on "Recent Unrest at Canary Islands' Teide Volcano?"

PAGE 488

Small-magnitude seismic episodes unrelated to a volcanic eruption have been a relatively frequent feature in all the Canaries without causing any significant public alarm. Conversely, great alarm was raised in May 2004 in Tenerife, when apparently numerous low-magnitude seismic signals were recorded, although only a few of them were actually felt in nearby villages.

Public alarm was raised by (1) the publication on a Web site of imperceptible seismic signals as low as 0.6 on the Richter scale, most of which were not even adequately localized and yet were reproduced almost daily in the local and national press without further comment or explanation; (2) a Spanish national scientific committee being replaced by a local committee that was scientifically advised by a private company; and (3) publicity given by the media to the prediction made by members of the local committee of a potentially large scale explosive eruption in October 2004 (dubbed "the October volcano" by residents). Interestingly, obvious fumarole activity was absent in autumn 2004 during an inspection of Teide summit by three of us.

At Teide volcano, which has only had a single eruptive episode (1150 ± 140 years B. P.) in the past 30,000 years [*Carracedo et al.*, 2007], centralized eruptive activity, even with seismic precursors, is highly unlikely. Holocene activity in Tenerife comprises some 37 events: 60–80% were basaltic rift fissure eruptions; and 20–40% were more differentiated and slightly more explosive, forming phonolitic lava domes at the volcano's perimeter. The only volcanic manifestation observed in our continued work since 2001 on the northwest-northeast rift zones and the Teide volcanic complex was occasional fumaroles at the summit of the Teide stratocone. A small eruption similar to that of the recent geologic record is always possible on Tenerife, as on all active ocean islands. It is the responsibility of scientists and authorities to prevent false alarms, unnecessary public distress, economic losses, and the discredit of science. J. C. Carracedo did not predict an eruption in spring 2004 [*Pérez and Hernández*, this issue], although this could not altogether be discarded at that early stage. The only prediction, as can be seen in the original Spanish newspaper, was the most probable type of eruption should one occur: a small-scale basaltic one consistent with the Holocene eruptive record.

References

Carracedo, J. C., et al. (2007), Eruptive and structural history of Teide volcano and rift zones of Tenerife, Canary Islands, *Geol. Soc. Am. Bull.*, *119*(9), 1027–1051.

Pérez, N. M., and P. A. Hernández (2007), Comment on "Recent unrest at Canary Islands' Teide volcano" by J. C. Carracedo et al., *Eos Trans. AGU*, this issue.

—JUAN CARLOS CARRACEDO, Estación Volcanológica de Canarias, CSIC, Tenerife, Spain; E-mail: jcarracedo@ipna.csic.es; VALENTIN R. TROLL, Department of Geology, Trinity College, Dublin; FRANCISCO PÉREZ TORRADO and ALEX HANSEN, Departamento Geología, Universidad de Las Palmas de Gran Canaria, Spain; EDUARDO RODRÍGUEZ BADIOLA, Museo Nacional de Ciencias Naturales, CSIC, Madrid; RAPHAEL PARIS, Maison de la Recherche, CNRS, Clermont-Ferrand, France; HERVÉ GUILLOU and STÉPHANE SCAILLET, Laboratoire des Sciences du Climat et de l'Environnement, CNRS, Gif-sur-Yvette, France.