ROQUE NUBLO NON-WELDED IGNIMBRITE: A TYPE OF IGNIMBRITE IN GRAN CANARIA (CANARY ISLANDS, SPAIN)

F.J. PEREZ TORRADO
Dpto. Geología. Facultad Ciencias del Mar, Universidad Las Palmas, Gran Canaria, Campus de Tafira, E-35017 Las Palmas de Gran Canaria, Spain

The second magmatic cycle in Gran Canaria (Canary Islands) occurred during the Pliocene, approximately between 5 and 3.4 Ma ago. It is characterized by some thick pyroclastic deposits named Roque Nublo agglomerates or breccias. The study of its structures shows that they are non-welded ignimbrites, formed from pyroclastic flows that may have had high density and moderate to low fluidisation state.

The paleotopographic reconstruction of the central and northern sectors of the island just before this cycle, shows that the earliest pyroclastic flows were quickly channeled through previous valleys and they were unable to surmount topographic barriers. Nevertheless, the latest pyroclastic flows could spread extensively through valleys and interfluves and could travel more than 20 km, reaching the sea. This was possible because these latest flows travelled through an almost flat relief, due to the previous accumulation of materials of the same magmatic cycle in sunken areas.

There are not Plinian pyroclastic fall deposits between these ignimbrites. This reason, together with the possible high density of the parents pyroclastic flows, suggest that these pyroclastic flows may have been originated by instantaneous column collapse.

The high proportion of lithics (40-70%) of very different size, from mm to a few meters, in these deposits, prevented the development of welding in them.

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