Indication for an Impact Scenario which formed the Anaga Range of the Canary Island Tenerife

The following images (extracted from the study : "**Rift zone reorganization**….") indicate that a secondary impactor of the Permian Triassic Impact which probably produced a Ø 12 x 10 km elliptical crater just north of the Anaga Range may have formed the Anaga Range. This is indicated by the curved tensile fault, the lineament distribution and the distribution of the stress vectors in the compression- and extension-field of the Anaga Range (→see maps)

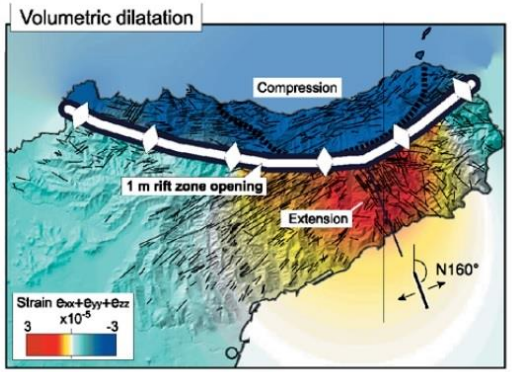


Fig. 7 Dislocation models calculated at a horizontal plane. A segmented rift zone was defined with an outline similar to the middle rift episode on Anaga. A curved tensile fault simulates the curved rift zone, uniform dislocation is 1 m. (**A**) Surface displacement vectors show that movement focused on the northern flank that is encircled by the rift zone. Dike intrusion along such a curved rift zone will thus promote flank creep. (**B**) Volumetric dilatation caused by 1-m horizontal widening of a curved rift zone. Dislocation models were calculated for a horizontal plane at 2 km depth, i.e. approximately at sea level. Positive strain (*red color*) matches the region where the third rift arm oriented NNW–SSE (160°) developed on Anaga. Negative volumetric dilatation is found elsewhere, strongest in the northern sector. Virtually complete absence of the NNW–SSE dike trend in the northern sector is due to the compressive field to the north of the curved rift

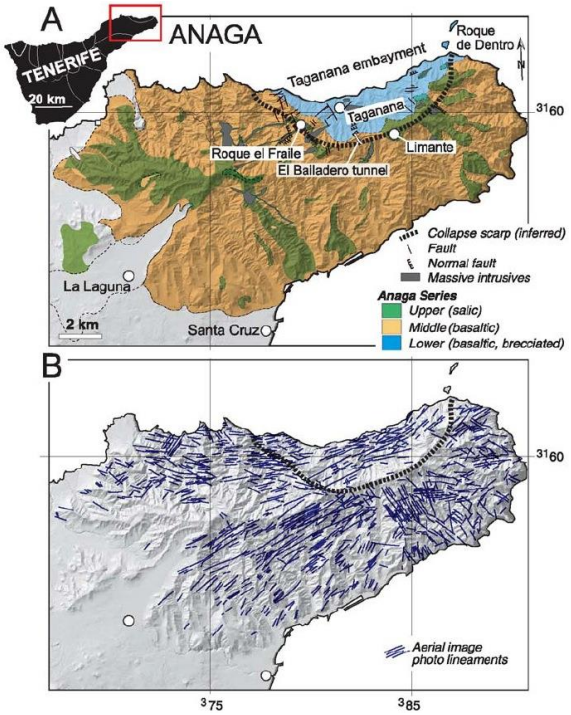
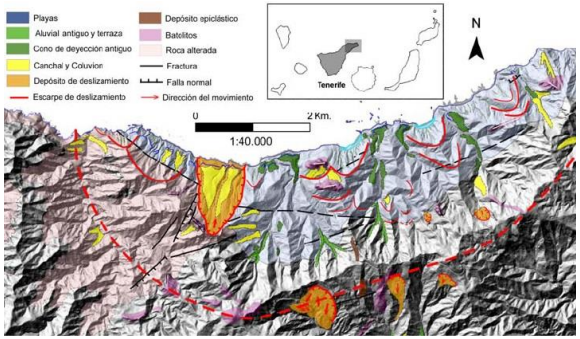
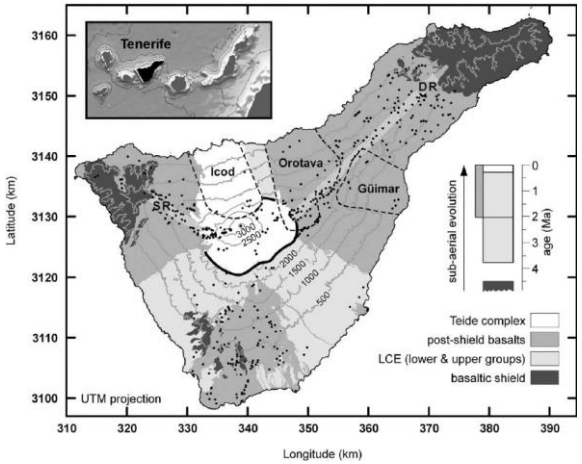


Fig. 2 Maps of Anaga area showing (**A**) a simplified geological map with the three major geological series, and (**B**) lineament distribution from aerial images on Anaga. *Dashed black line* marks the morphologically prominent horseshoe-shaped amphitheater and debrite outcrops. Note the numerous lineament paths that outline this amphitheater. In central Anaga, a NE–SW swarm of lineaments is pronounced. This trend becomes more diffuse towards the northeastern coast of Anaga. To the southeast, lineament traces are oriented NNW-SSE (160°) and thus perpendicularly to the topographic ridge WSW-ENE. This trend is not favored by topography and is not found within the northern sector, i.e. it appears to be confined to the south of the amphitheater





Weblink of the study that provided the above shown images :

Rift zone reorganization through flank instability in ocean island volcanoes: an example from Tenerife, Canary Islands

https://www.researchgate.net/publication/225593886_Rift_zone_reorganization_through_flank_instability_in_ocean_island_volcanoes_An_example_from_Tenerife_Canary_Islands

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Other interesting studies to the formation of the Canary Islands & Tenerife :

Gravity analysis offshore the Canary Islands from a systematic survey

https://www.researchgate.net/publication/227126760_Gravity_analysis_offshore_the_Canary_Islands_from_a_systematic_survey

An alternative early opening scenario for the Central Atlantic Ocean

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The Canary Islands Hotspot

the Canary islands hotspot

Gabbroic xenoliths from La Palma, Tenerife and Lanzarote, Canary Islands: evidence for reactions between mafic alkaline Canary Islands melts and old oceanic crust

Gabbroic xenoliths from La Palma, Tenerife and Lanzarote, Canary Islands: Evidence for reactions between mafic alkaline Canary Islands melts and old oceanic crust | Request PDF (researchgate.net)

Alternative :

Mantle Xenoliths from Tenerife (Canary Islands): Evidence for Reactions between Mantle Peridotites and Silicic Carbonatite Me lts inducing Ca Metasomatism | Journal of Petrology | Oxford Academic (oup.com)

Mantle and crustal xenoliths from Canary Island Lanzarote

http://escholarship.org/uc/item/02f8g0k7#page-14