Geophysical Research Abstracts, Vol. 7, 05866, 2005 SRef-ID: 1607-7962/gra/EGU05-A-05866 © European Geosciences Union 2005



Links between eruption intensity and properties of the shallow conduit melt at Stromboli volcano in 2002

N. Lautze, B. Houghton

University of Hawaii, Manoa, USA (nlautze@soest.hawaii.edu / Fax: (808) 956-5512 / Phone: (808) 956-9544)

This study links variability in the physical properties of ejecta with changing eruptive patterns at Stromboli volcano (Aeolian Islands, Italy) in 2002. Activity shifted from mild, dominantly ash-charged explosions (January-May) into a phase of intense explosions (June-late December), followed by an abrupt onset of the 2002/2003 effusive eruption (28 December). Sets of lapilli from May, September/October, and December track changes in the shallow melt over this period. The observed textures indicate that this melt was a dynamic mixture of varying proportions of actively vesiculating rising magma, and stagnant, partly outgassed magma. We present observational and quantitative data to highlight this variability within the ejecta, and constrain rheological diversity present in the 2002 melt. We conclude with a realistic discussion of how changing characteristics of melt in the shallow conduit at Stromboli are a strong influence on eruption intensity.