Geochemistry, Geophysics, Geosystems

Supporting Information for

Spatio-temporal evolution of the Kolumbo Volcanic Chain and its link to the volcanic plumbing system of Santorini

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Introduction

Here we present supporting information for the paper titled "Spatio-temporal evolution of the Kolumbo Volcanic Chain and its link to the volcanic plumbing system of Santorini". Contained in this file is a description of the processing of the seismic reflection data (Text S1), and uninterpreted versions of the seismic profiles shown in Figures 2-6 (Figure S2-S6).

Text S1.

The seismic data used in this study are from two cruises between from 2006 (Sigurdsson et al., 2006; Hübscher et al., 2006). Single-channel seismic data were acquired in 2006 during the THERA project on RV Aegaeo. As the seismic source, a G-pulser was used with a volume of 10 in3. The general processing comprised simple bandpass filtering (15-500 Hz), de-spiking, and spherical divergence correction. In order to migrate the data, we binned the shot points into a regular spacing of 10 m. After migration, we applied a top-mute and white-noise removal. The vertical resolution of these data can be approximated to 8-15 m (using the $\lambda/4$- or $\lambda/2$-approximation) within the shallow sediments (v=1900 m/s).

For the cruise POS338 with RV Poseidon, a GI-pulser was used and operated in true GI mode with a primary (Generator) volume of 45 in^3 and a secondary (Injector) volume of 105 in^3. Using a 600 m analog streamer with 24 Channels, we defined a CMP-spacing of 12.5 m. Processing of these data comprised trace-editing, simple frequency filtering (10-500 Hz), suppression of a receiver-ghost signal by predictive deconvolution, surface-related multiple elimination as well as spherical divergence correction, pre-stack time migration followed by top-muting and white-noise removal. These data have a main frequency of 60 Hz indicating a vertical resolution of approx. 8-15 m.

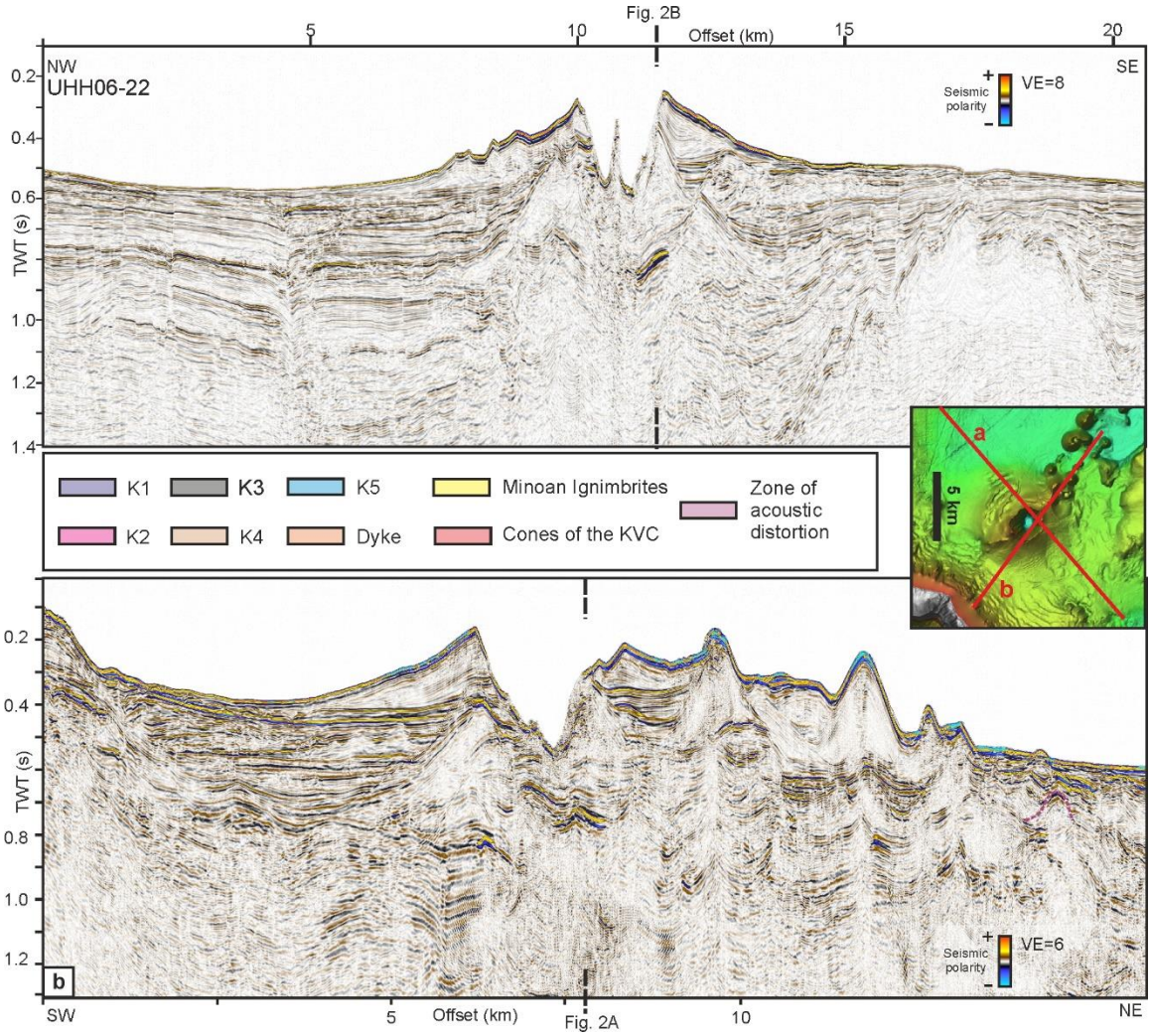

Figure S2. Uninterpreted version of the seismic profiles shown in Figure 2.

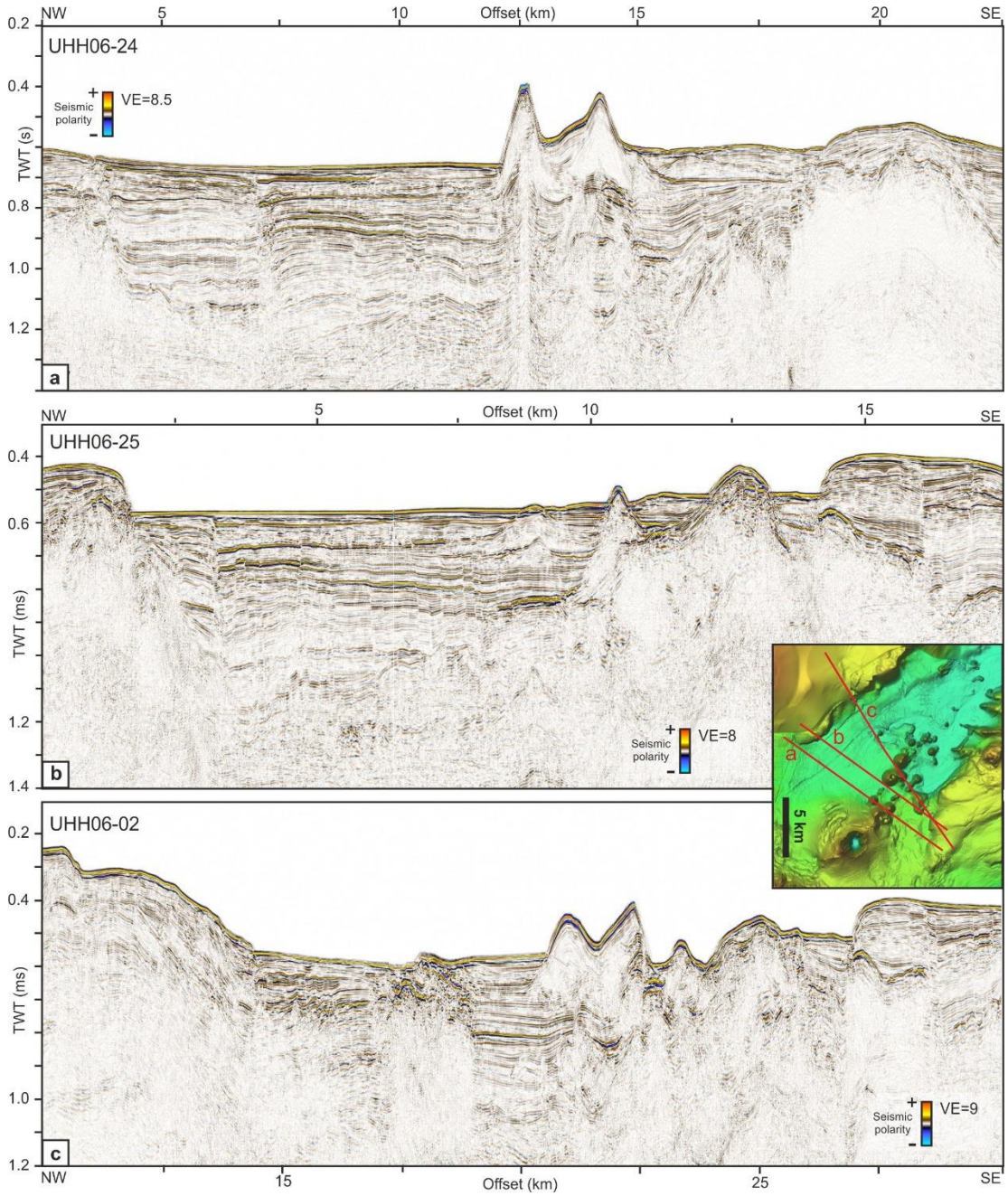

Figure S3. Uninterpreted version of the seismic profiles shown in Figure 3.

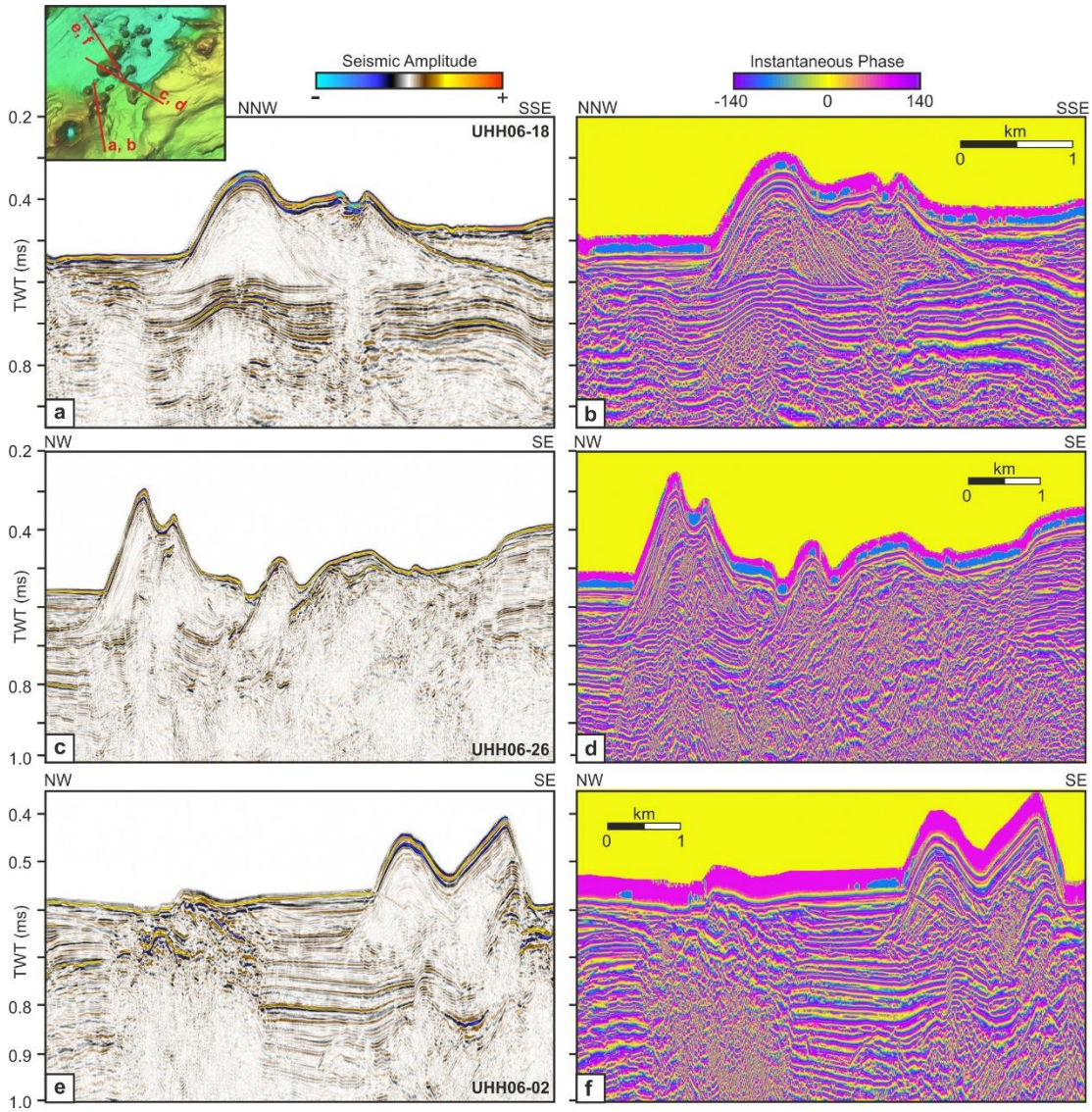

Figure S4. Uninterpreted version of the seismic profiles shown in Figure 4.

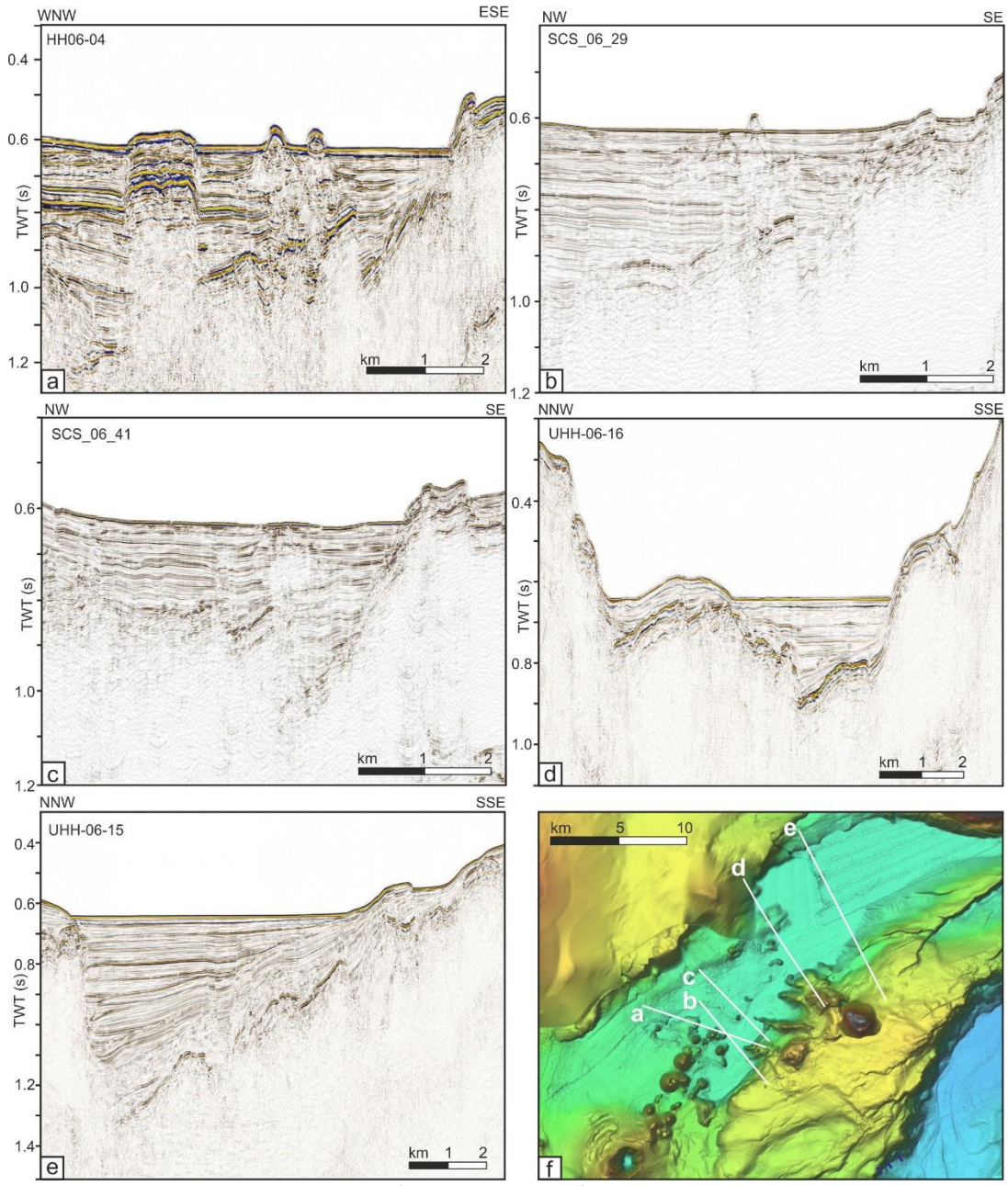

Figure S5. Uninterpreted version of the seismic profiles shown in Figure 5.

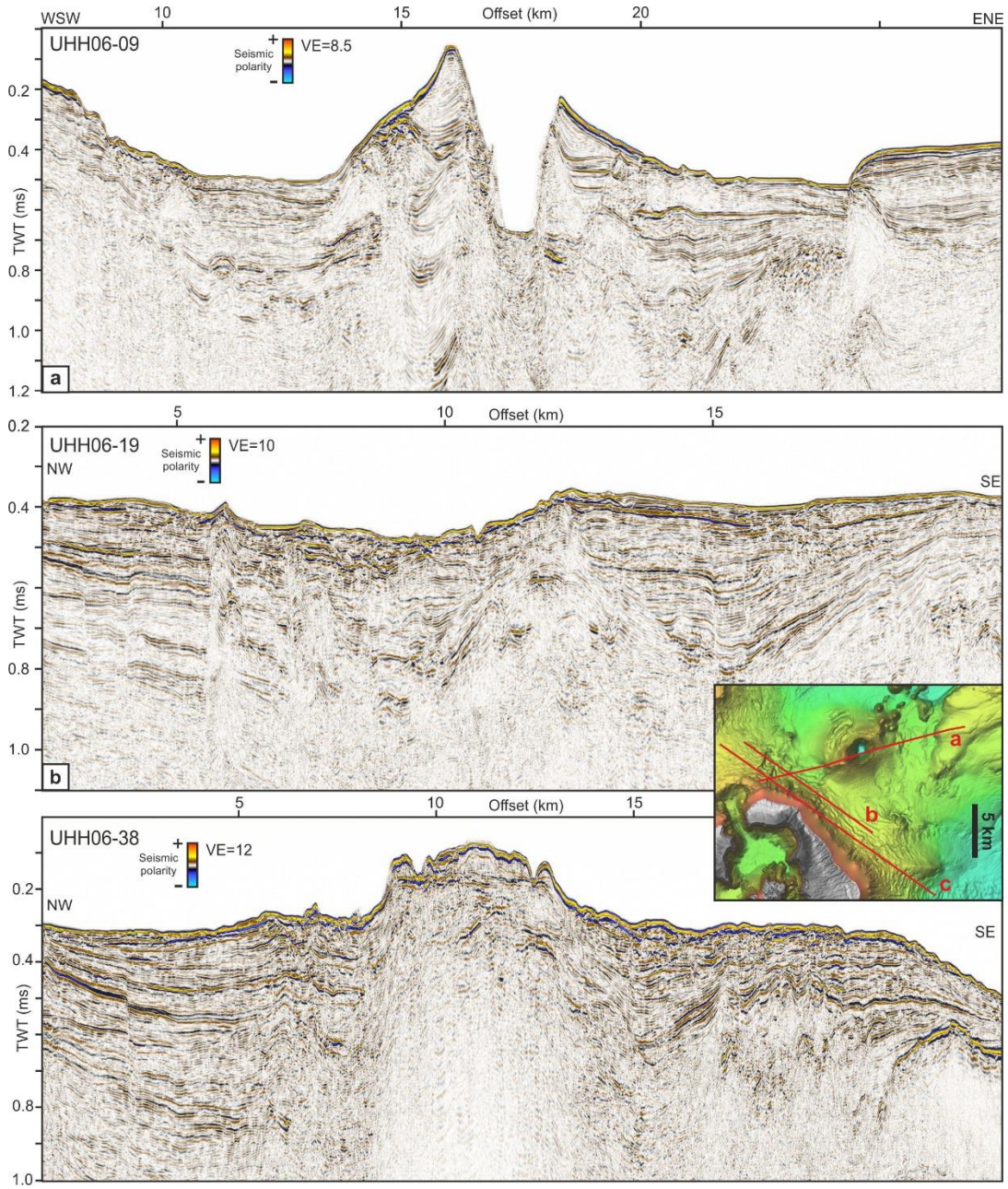

Figure S6. Uninterpreted version of the seismic profiles shown in Figure 6.