

429 **Supplementary Material**

430 We present supplementary figure accompanying the main text that provide visual documentation of the 2023 eruptive activity of
431 Mount Etna, focusing on three ephemeral vents within the South East Crater (Figures S1). Additionally, Figure S2 illustrates
432 the variations in the mean amplitudes of the recorded explosions during the study period.

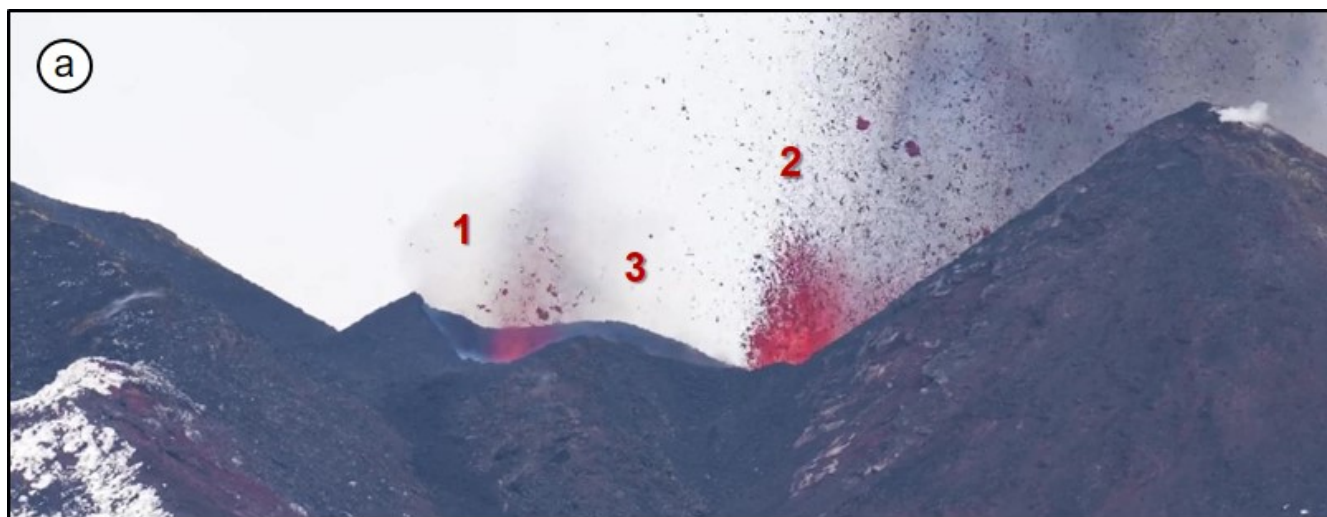


Figure S1. Images of the South East Crater documenting eruptive activity at three ephemeral vents (1, Ephemeral Vent 1; 2, Ephemeral Vent 2; 3, Ephemeral Vent 3), occurring in a near-synchronous manner. Photo (a) shows simultaneous explosive activity at ephemeral vents 1 and 3, whereas photo (b) illustrates ongoing eruptive activity at ephemeral vent 3 alongside the partial cessation of explosive activity at ephemeral vent 1 (photo credit: M. Mammino).

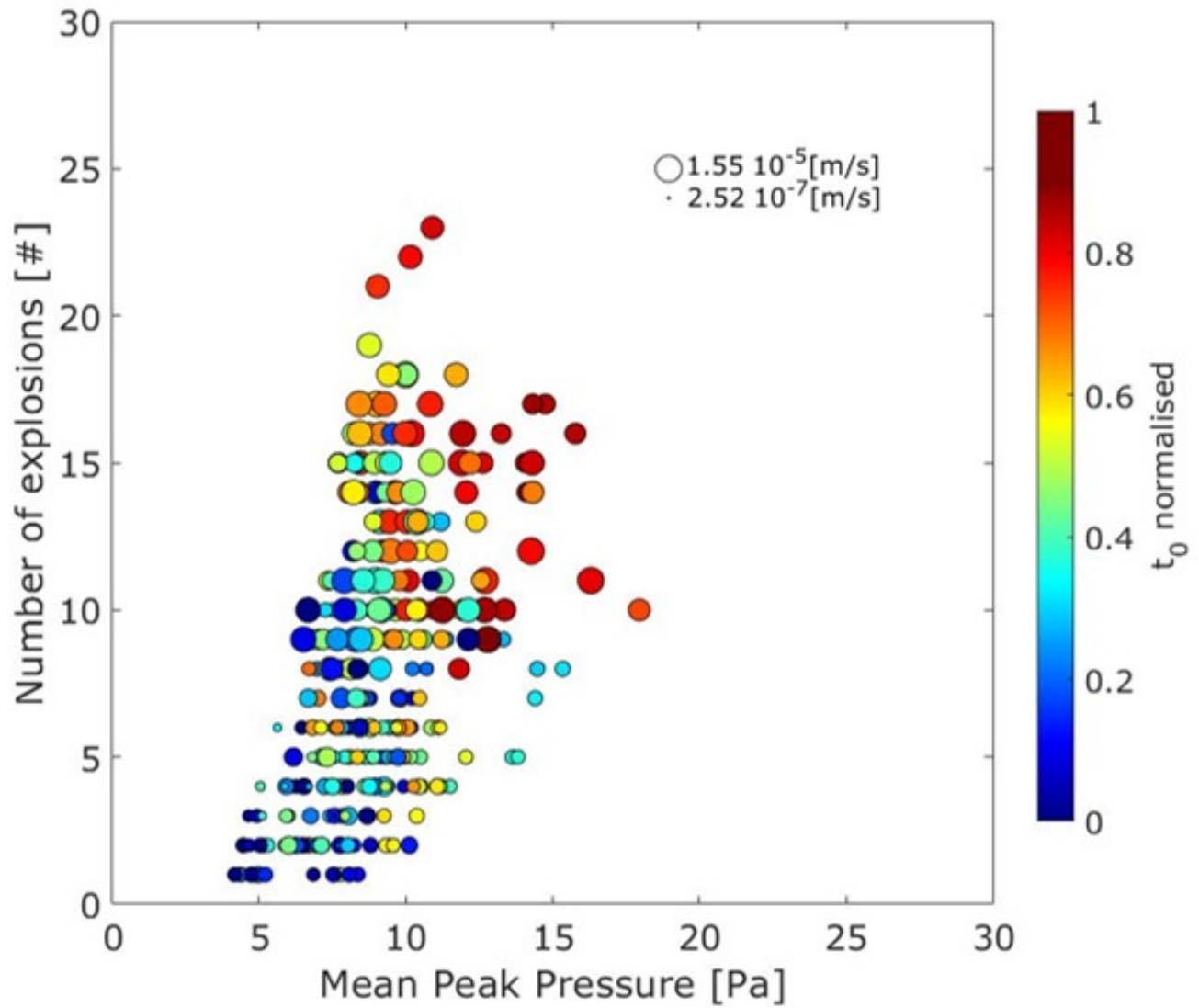


Figure S2. The results of a 4-minute moving window analysis with a 1-minute shift, applied within each cycle to calculate both the number of explosions and their average amplitude. Each dot represents one window, with the x-axis showing the mean peak pressure, and the y-axis indicating the number of explosions. Dot size is scaled by the RSAM amplitude of the seismic signal in the corresponding window, and the color represents normalized time within the cycle (from 0 at the cycle onset to 1 at the end).