Supplementary meterials

The 2014 Effusive Eruption at Stromboli: New Insights from in Situ and Remote-Sensing Measurements

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Text 1. Supporting information to the main text.

Table S1. Resume of the eruptive activity during the run-up and onset phases of the 2014 flank eruption, as derived from the camera monitoring network and GBInSAR device.

Date	Live-cams observations	GBInSAR measuraments
30 May 2014 – 31 Jul 2014	Frequent explosive activity (~15 explosions x hour) - Overflows Landslides	Crater terrace anomalous displacement rate (0.11 mm/h) NEC debris cone anomalous displacement rate (0.1-1 mm/h)
01 Aug 2014 - 05 Aug 2014	Increasing explosion frequency (up to 30 explosions x hour)	Increasing crater terrace and NEC debris cone displacement rate (up to 2.7 mm/h)
06 Aug 2014 08:50 GMT	Overflow (between NEC2 and NEC-hornito)	
06 Aug 2014 10:00 - 11:00 GMT		Increasing crater terrace displacement rate (4.3 mm/h) Increasing NEC debris cone displacement rate (23.6 mm/h)
06 Aug 2014 11:00 GMT	Arcuate fractures on the NE crater rim between NEC1 and NEC-hornito	
06 Aug 2014 11:00 - 13:00 GMT		Increasing crater terrace displacement rate (12.1 mm/h) Increasing NEC debris cone displacement rate (94.6 mm/h)
06 Aug 2014 12:22 GMT	First incandescent blocks from the NEC2/NEC-hornito into the sea	
06 Aug 2014 12:29 GMT	Overflow (between NEC-hornito and SWC)	
06 Aug 2014 12:32-13:00 GMT	Landslide (N flank of the crater terrace)	
06 Aug 2014 12:35-13:00 GMT	Incandescent blocks accumulation along the coast	
06 Aug 2014 13:08 GMT	Overflow from NEC-hornito reaches the coast	
06 Aug 2014 14:05-14:08 GMT	Three landslides of hot blocks from the NEChornito along the SdF, reached the coast and went on spreading along the sea surface for several tens of meters	
06 Aug 2014 13:00 - 14:21 GMT		Loss in coherence in the NEC-hornito and NEC debris cone Inverting crater terrace displacement rate (-23 mm/h)
06 Aug 2014 14:50 GMT	Overflow from NEC-hornito reaches the coast	
06 Aug 2014 15:46 GMT	Overflow from NEC-hornito reaches the coast	
06 Aug 2014 16:02 GMT	Hot avalanches from the NEC-hornito along the SdF	
06 Aug 2014 16:08 GMT	Overflow from NEC-hornito reaches the coast	
06 Aug 2014 14:32 - 07 Aug 2014 04:00 GMT		Crater terrace displacement rate away from the sensor (-23 mm/h) Increasing NEC debris cone displacement rate (peak 236 mm/h at 16:00 GMT) NEC debris cone interferometric fringes recorded consistent with mass wasting of the entire debris cone
07 Aug 2014 01:21 - 01:32 GMT		Linear features characterized by large loss in coherence beneath the NEC
07 Aug 2014 ~02:30 GMT	Hot avalanches from the NEC-hornito along the SdF	
07 Aug 2014 ~03:00 GMT	NEC-hornito lava decreased Explosive activity from NEC increased - Increasing the size of the hot avalanche deposit	

07 Aug 2014 03:40 GMT	Hot avalanches from the NEC onto the Pianoro flat area	
07 Aug 2014 04:01 GMT		Complete loss in coherence in the crater terrace and NEC debris cone
07 Aug 2014 04:01 GMT	NE flank of NEC1 starts to collapse Lava flow from the NEC toward the Pianoro flat area Hot avalanches from the NEC debris cone onto the Pianoro flat area and along the SdF	
07 Aug 2014 05:01 GMT	Downslope curved fracture opened on the flank of the cone	
07 Aug 2014 05:16 GMT	V1 opened at 05:16 and at. Opening of the ephemeral vent (V1) at ~650 m a.s.l Landslide onto the Pianoro flat area and along the SdF Lava flow onto the Pianoro flat area	
07 Aug 2014 05:30 GMT	Lava flow along the SdF	
07 Aug 2014 05:26 - 05:37 GMT		Complete loss in coherence in the SdF
07 Aug 2014 ~06:02 GMT	Hot avalanches from the NEC debris cone reaches the coast	
07 Aug 2014 06:24 GMT	Lava flow from V1 reaches the coast	

Figure S1. – Lava flow – sea water interaction during the first phase of the 2014 flank eruption (7 August 2014).

Figure S2. – Lava delta as observed on 8 August 2014.

Figure S3. – The Sciara del Fuoco from the sea (9 August 2014).

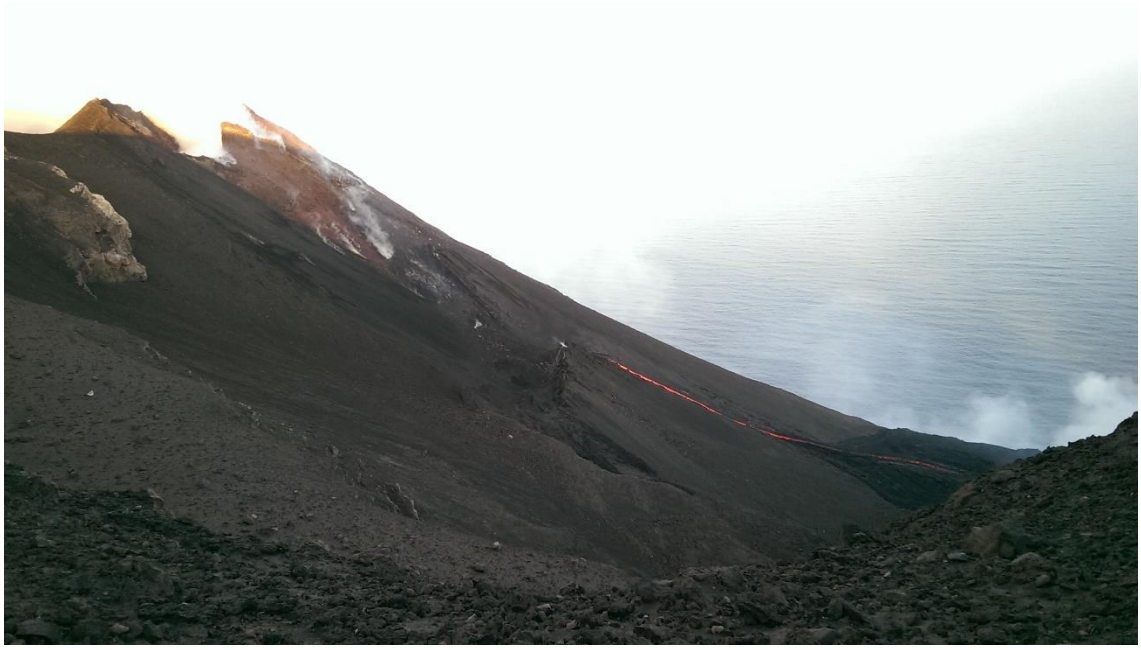


Figure S4. – Vent area as observed on 15 August 2014.

Figure S5. – Vent area as observed on 9 October 2014.

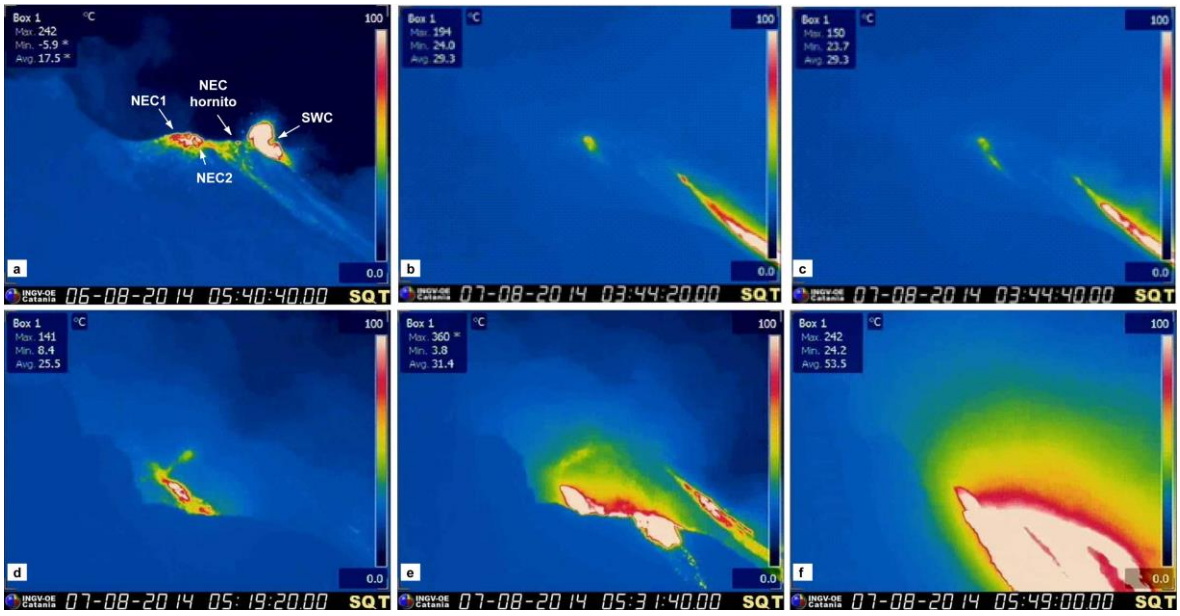


Figure S6. Thermal images recorded from the NE flank of the Sciara del Fuoco (SdF), showing the NE portion of the summit crater zone. The names of the summit craters (NEC1, NEC2, NEC hornito and SWC) are the same as in Figure 1b. (**a**) Explosive activity from SWC (in white) and accumulation of spatter around the vents (red) observed on 6 Aug. at 5:40:40 UT. (**b**) Initial opening of the eruptive fissure between NEC1 and NEC2 (left yellow dot) and lava flow spreading from NEC hornito along the SdF (right white/red stripe), 7 Aug. at 03:44:20 UT. (**c**) Propagation of the eruptive fissure down slope and gradual deactivation of the lava flow, 7 Aug. at 03:44:40 UT. (**d**) The eruptive fissure propagates eastward towards the Pianoro and a lava flow starts from its base (white/red area) 7 Aug. at 05:19:20 UT. (**e**) The lava flow from the base of the eruptive fissure widened on the Pianoro and is spreading on its NE break in slope, while the previous lava flow is cooling down (on the right), 7 Aug. at 05:31:40 UT. (**f**) The lava flow from the base of the eruptive fissure is spreading along the upper SdF forming at least three well fed lava branches, 7 Aug. at 05:49:00 UT.

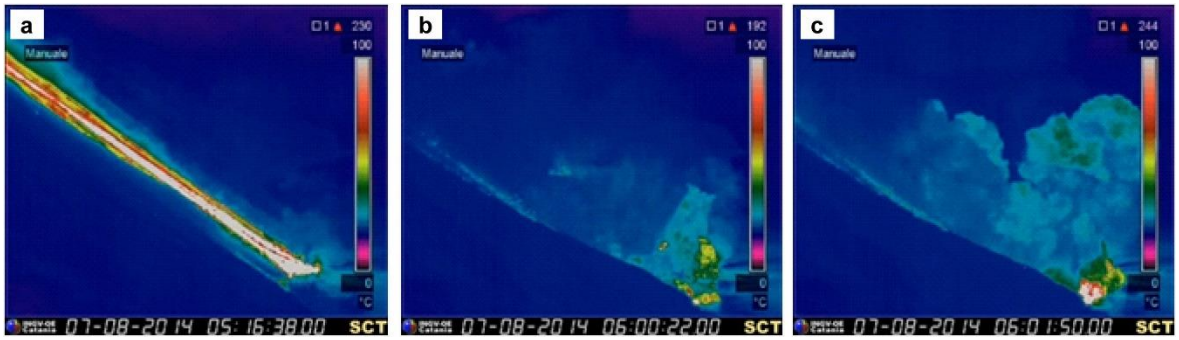
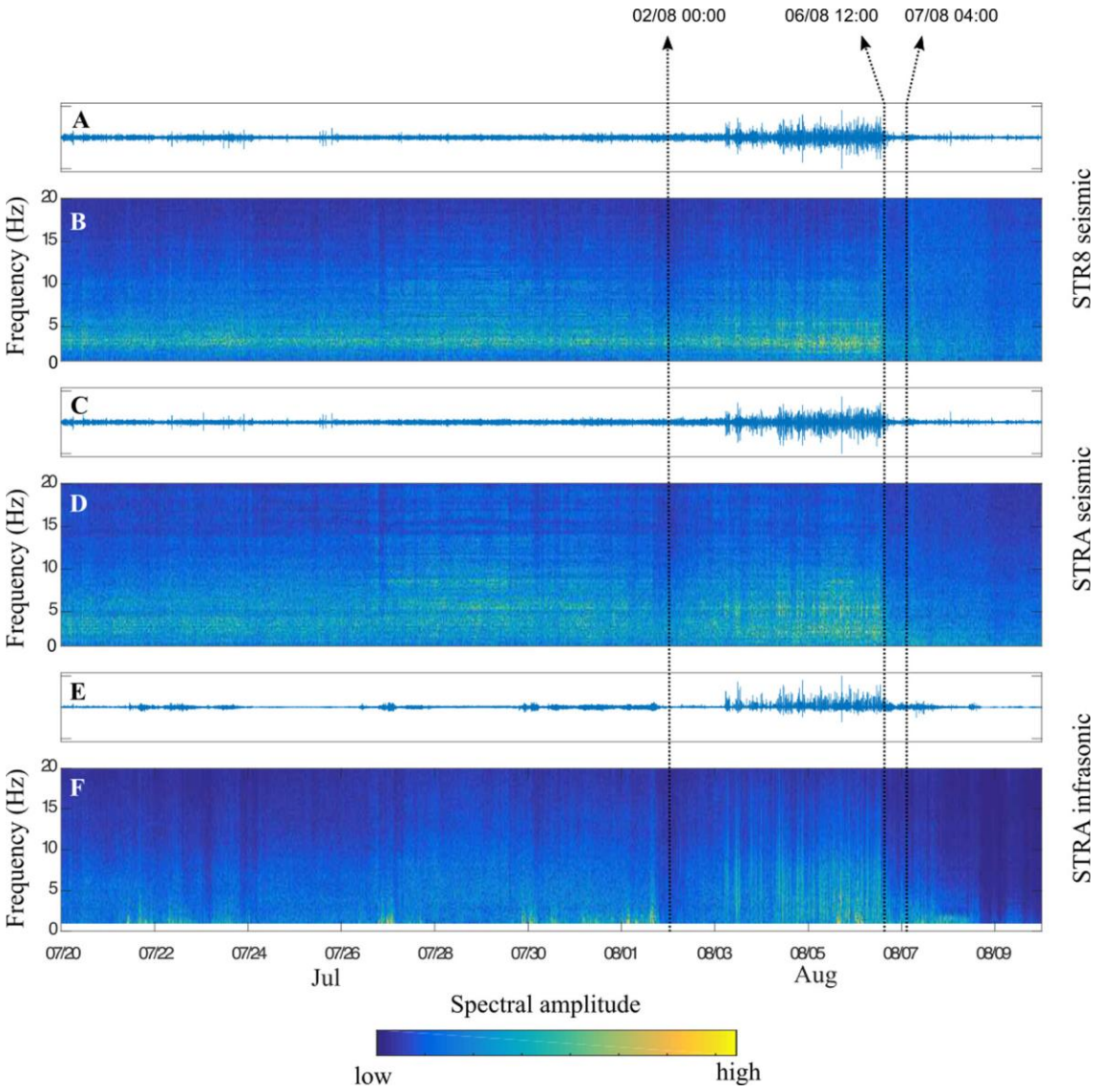


Figure S7. -.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07/08 04:00
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B
C
D
E
F
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15
10
5
0
STR8 seismic
STRA seismic
STRA infrasonic
07/20
07/22
07/24
07/26
07/28
07/30
08/01
08/03
08/05
08/07
08/09
Jul
Aug
Spectral amplitude
low
high

Figure S8. - .