Supplementary Material

Overview of seismo-acoustic tremor at Oldoinyo Lengai, Tanzania: shallow storage and eruptions of carbonatite melt

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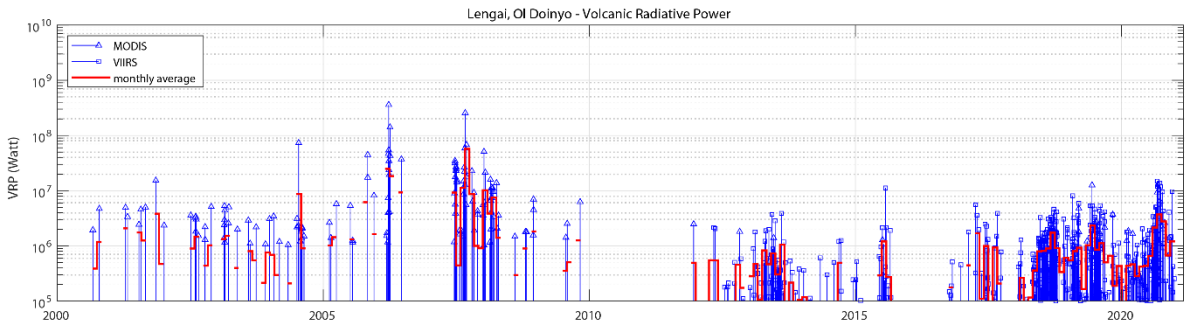
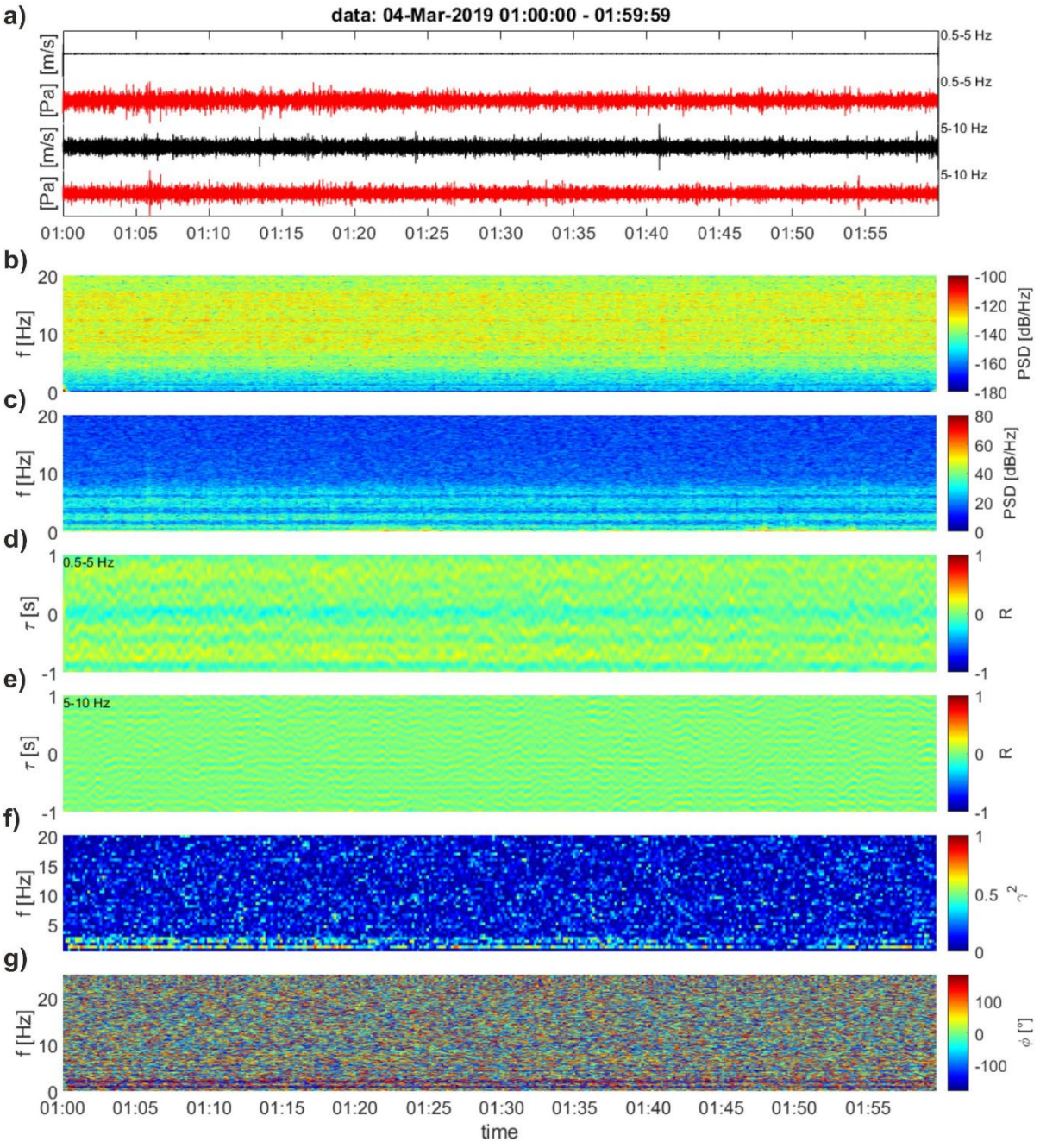
Supplementary Material

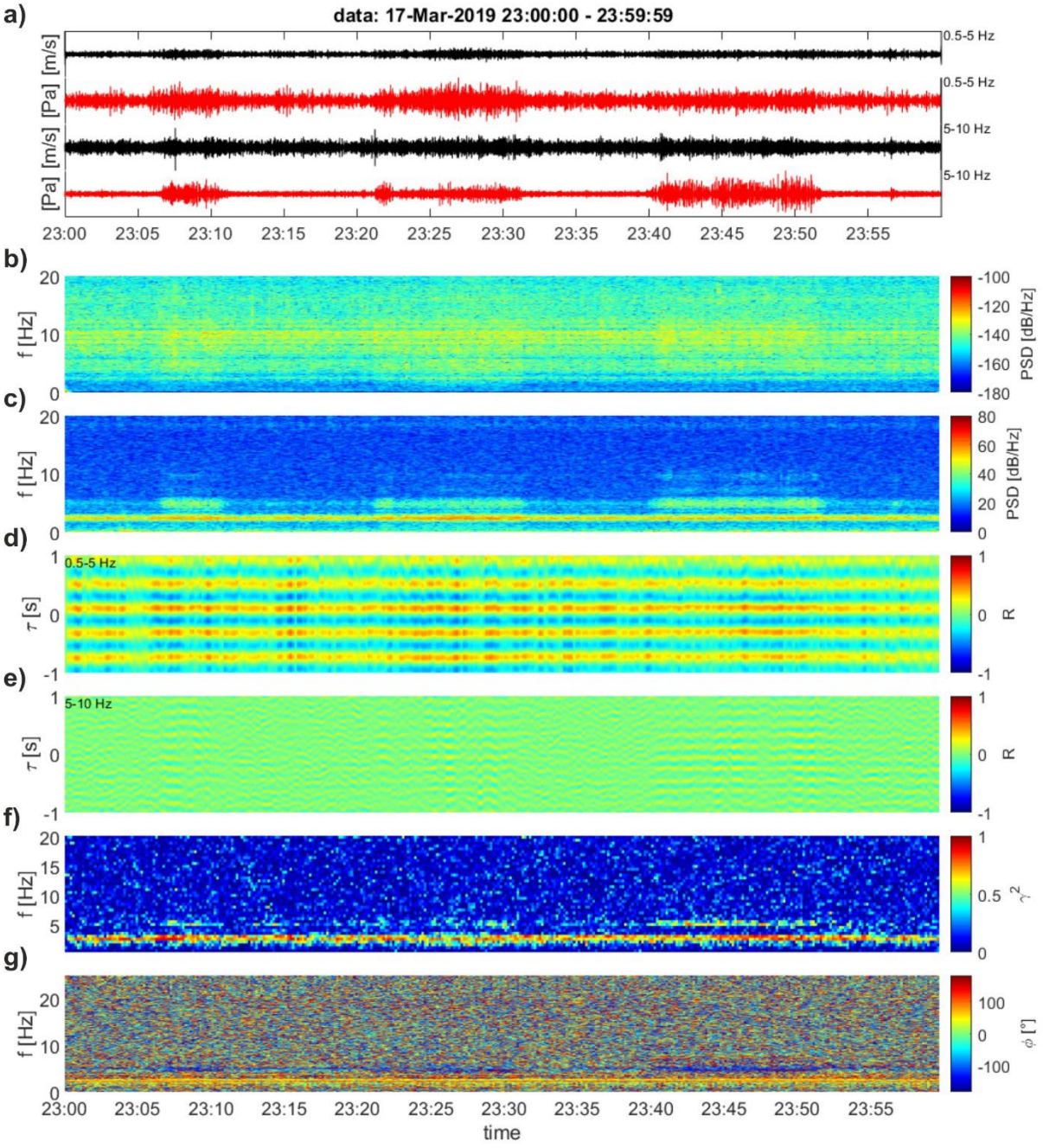


S1 Twenty years of volcanic radiative power.

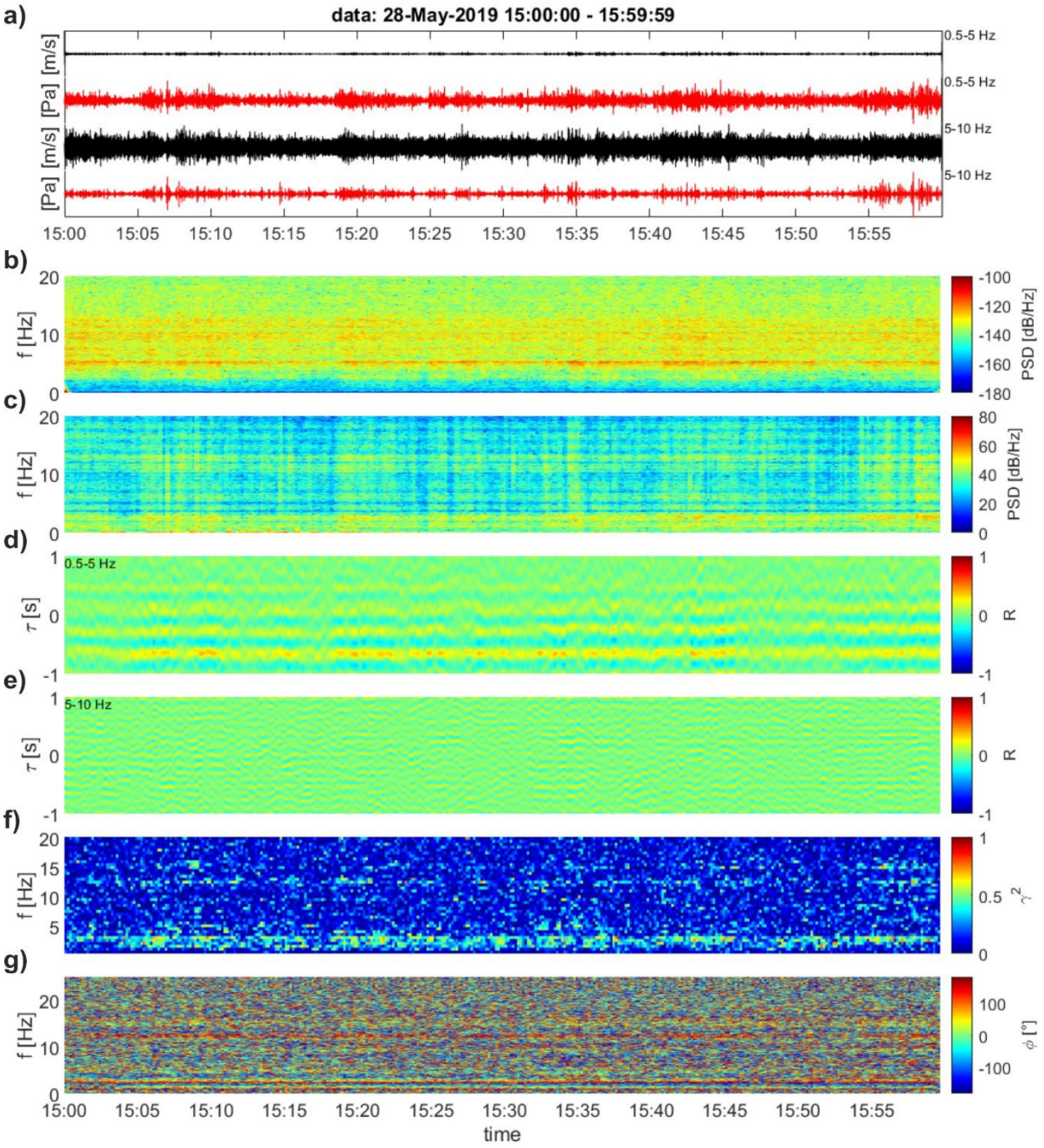


S2.1 Example of coherency analysis. Panels from top to bottom are: a) seismic time series filtered 0.5 – 5 Hz (black), infrasound time series filtered 0.5 -5 Hz (red), seismic time series filtered 5 -10 Hz (black), infrasound time series filtered 5 - 10 Hz (red), b) power spectral density of seismogram, c) power spectral density of infrasound data, d) seismo-acoustic cross correlation for 0.5 – 5 Hz, e) seismo-acoustic cross correlation for 5 – 10 Hz, f) coherency, g) phase shift.

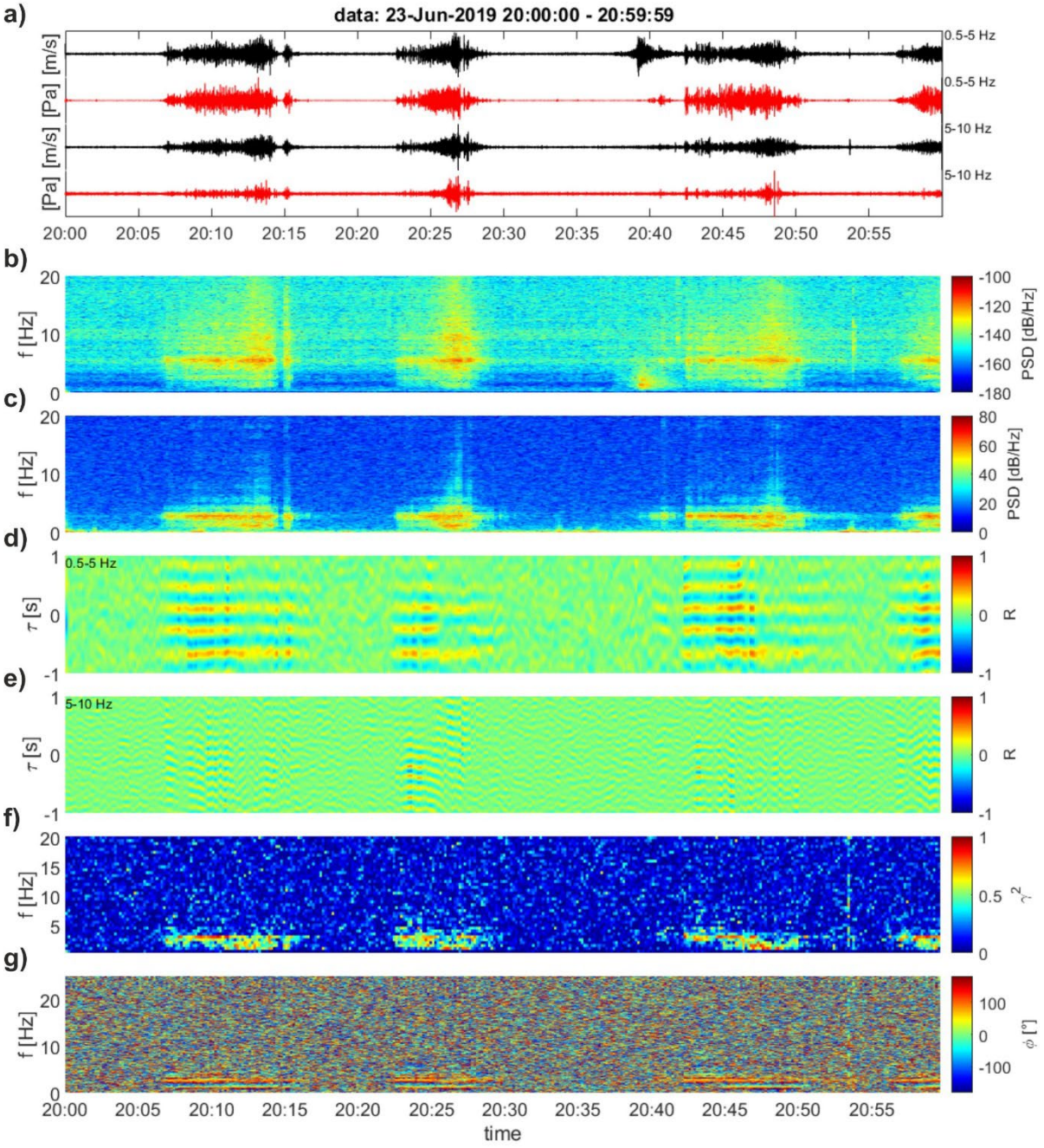
S2.2



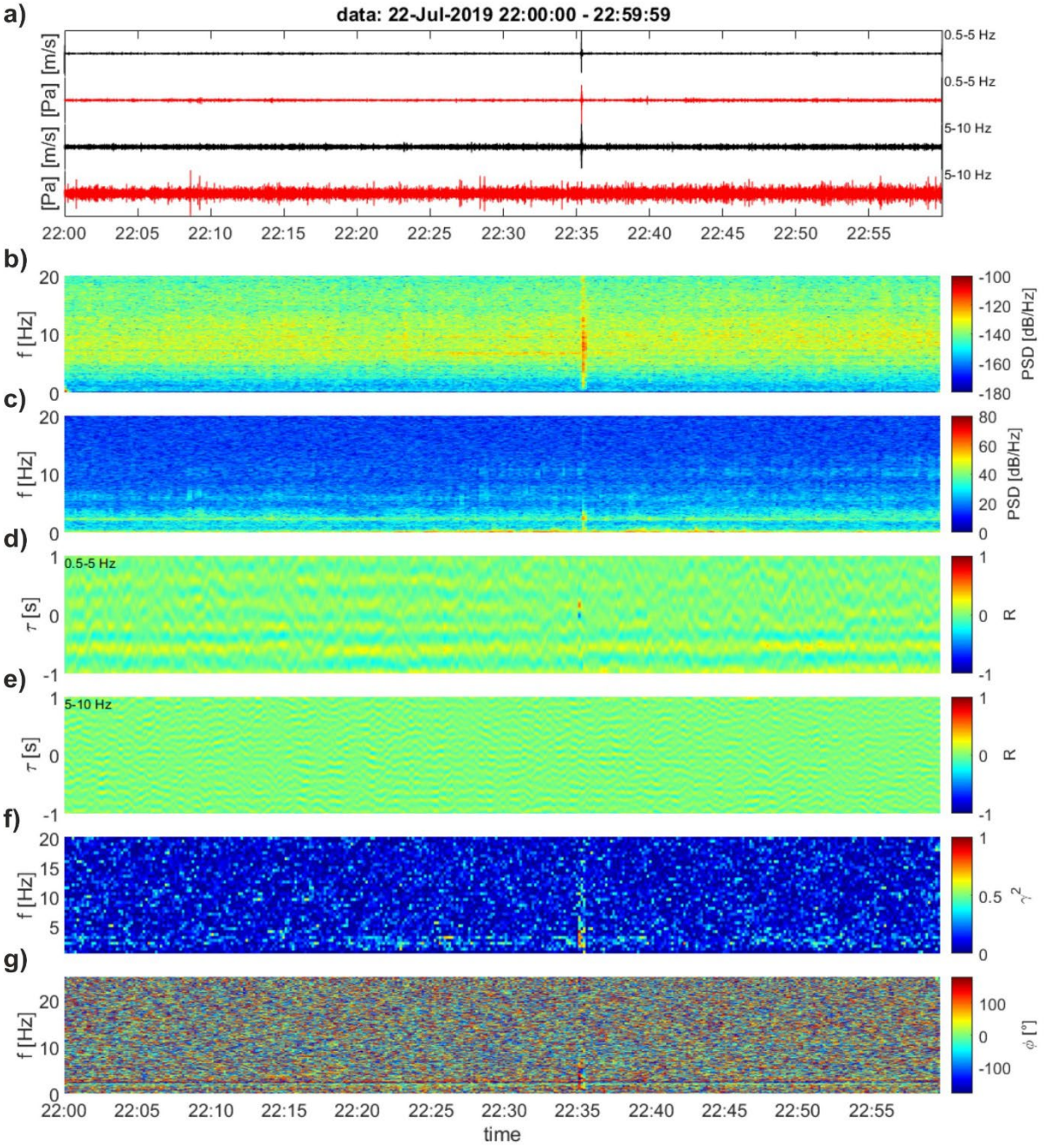
S2.2 Example of coherency analysis. Panels from top to bottom are: a) seismic time series filtered 0.5 – 5 Hz (black), infrasound time series filtered 0.5 -5 Hz (red), seismic time series filtered 5 -10 Hz (black), infrasound time series filtered 5 - 10 Hz (red), b) power spectral density of seismogram, c) power spectral density of infrasound data, d) seismo-acoustic cross correlation for 0.5 – 5 Hz, e) seismo-acoustic cross correlation for 5 – 10 Hz, f) coherency, g) phase shift.



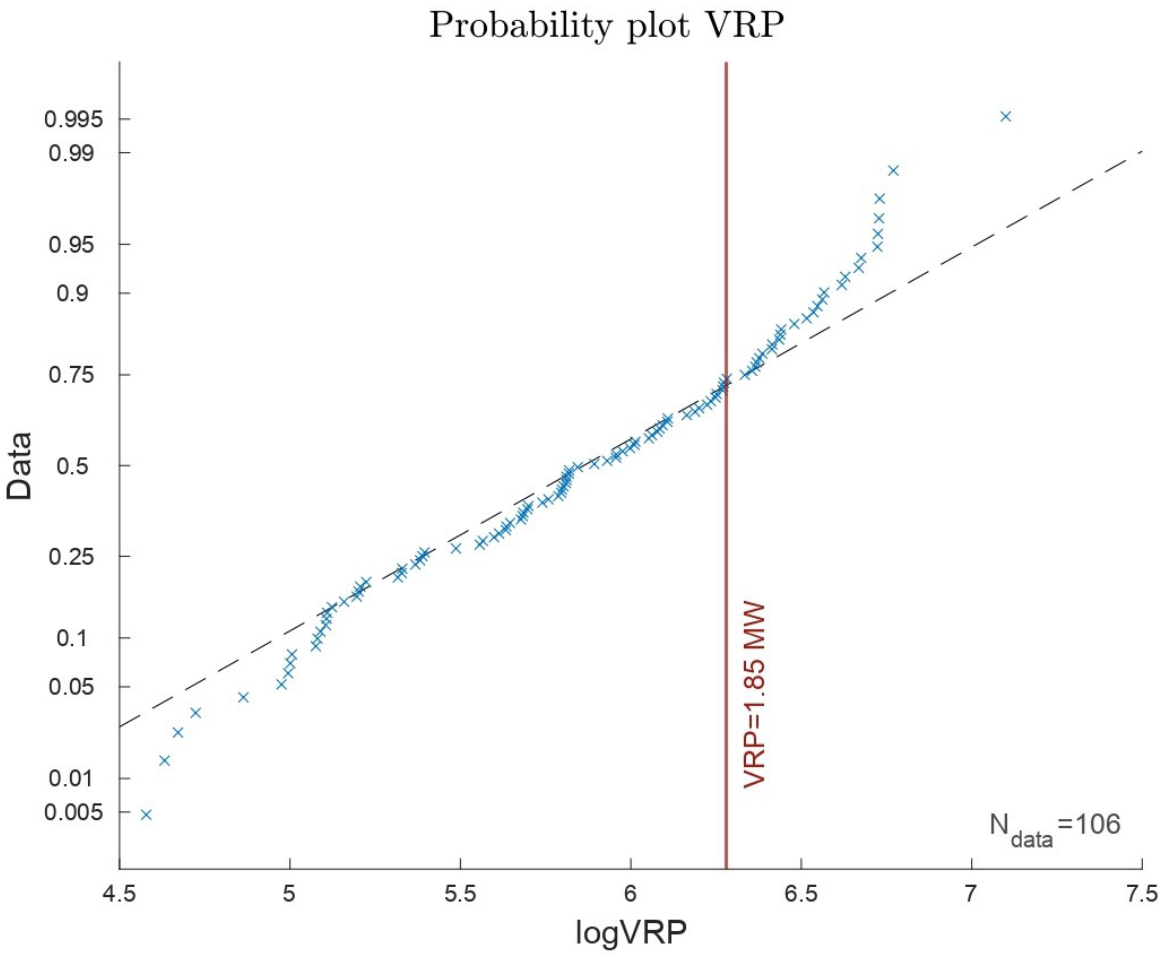
S2.3 Example of coherency analysis. Panels from top to bottom are: a) seismic time series filtered 0.5 – 5 Hz (black), infrasound time series filtered 0.5 -5 Hz (red), seismic time series filtered 5 -10 Hz (black), infrasound time series filtered 5 - 10 Hz (red), b) power spectral density of seismogram, c) power spectral density of infrasound data, d) seismo-acoustic cross correlation for 0.5 – 5 Hz, e) seismo-acoustic cross correlation for 5 – 10 Hz, f) coherency, g) phase shift.



S2.4 Example of coherency analysis. Panels from top to bottom are: a) seismic time series filtered 0.5 – 5 Hz (black), infrasound time series filtered 0.5 -5 Hz (red), seismic time series filtered 5 -10 Hz (black), infrasound time series filtered 5 - 10 Hz (red), b) power spectral density of seismogram, c) power spectral density of infrasound data, d) seismo-acoustic cross correlation for 0.5 – 5 Hz, e) seismo-acoustic cross correlation for 5 – 10 Hz, f) coherency, g) phase shift.

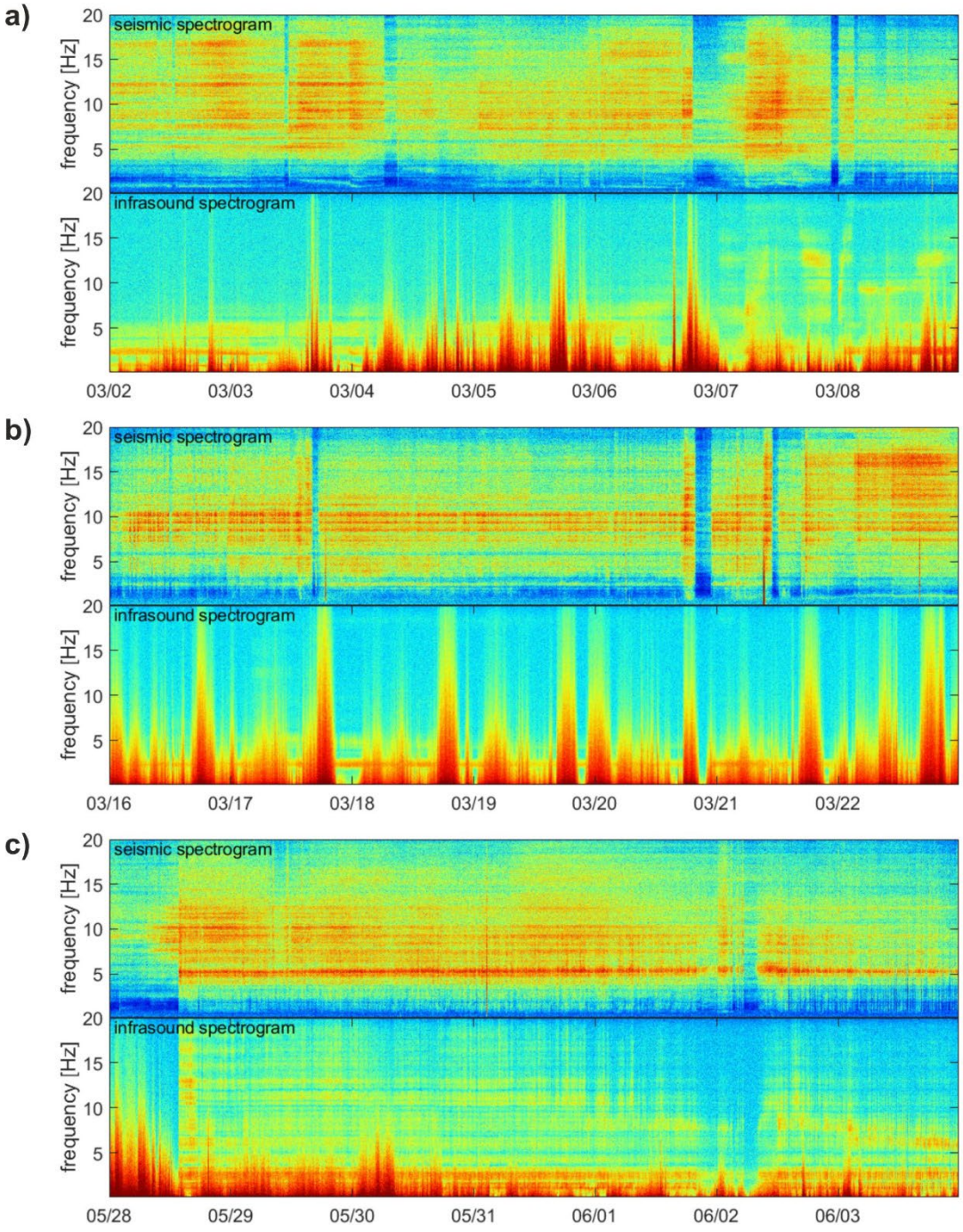


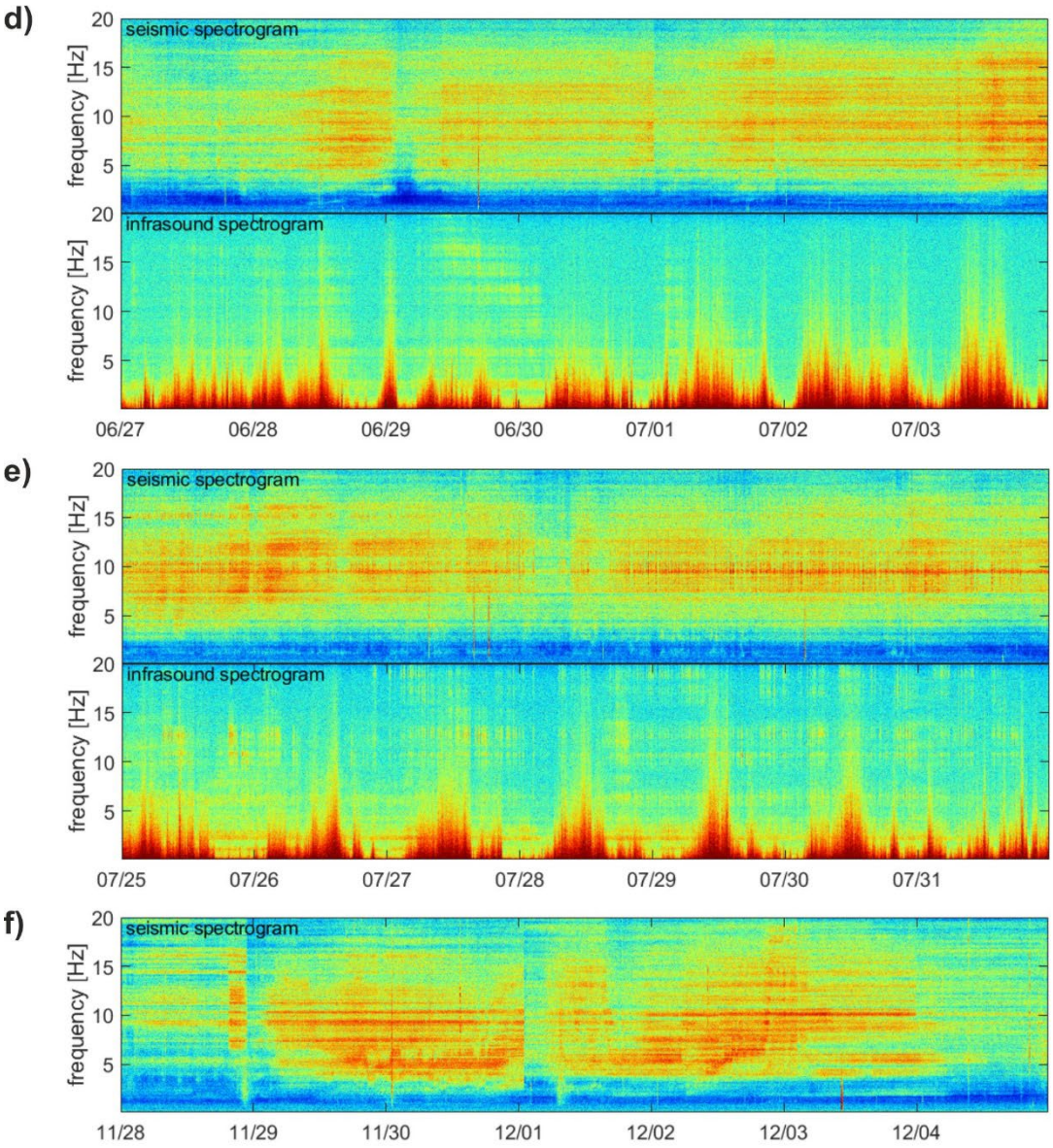
S2.5 Example of coherency analysis. Panels from top to bottom are: a) seismic time series filtered 0.5 – 5 Hz (black), infrasound time series filtered 0.5 -5 Hz (red), seismic time series filtered 5 -10 Hz (black), infrasound time series filtered 5 - 10 Hz (red), b) power spectral density of seismogram, c) power spectral density of infrasound data, d) seismo-acoustic cross correlation for 0.5 – 5 Hz, e) seismo-acoustic cross correlation for 5 – 10 Hz, f) coherency, g) phase shift.



S3 Probability Density Plot of Volcanic Raduative Power.

Supplementary Material





S4 Examples of week-long seismo-acoustic spectra for designated phases discussed in section 5.3. a) Extrusive Activity: 2nd – 8th of March 2019, b) Degassing: 16th-22nd of March 2019, c) Strong Eruptions / Spattering: 28th May – June 3rd 2019, d) Lava Pond: June 27th – July 3rd 2019, e) weaker eruptions: 25th-31st of July 2019, f) intrusions/hornito building: 28th November – 4th December 2019.

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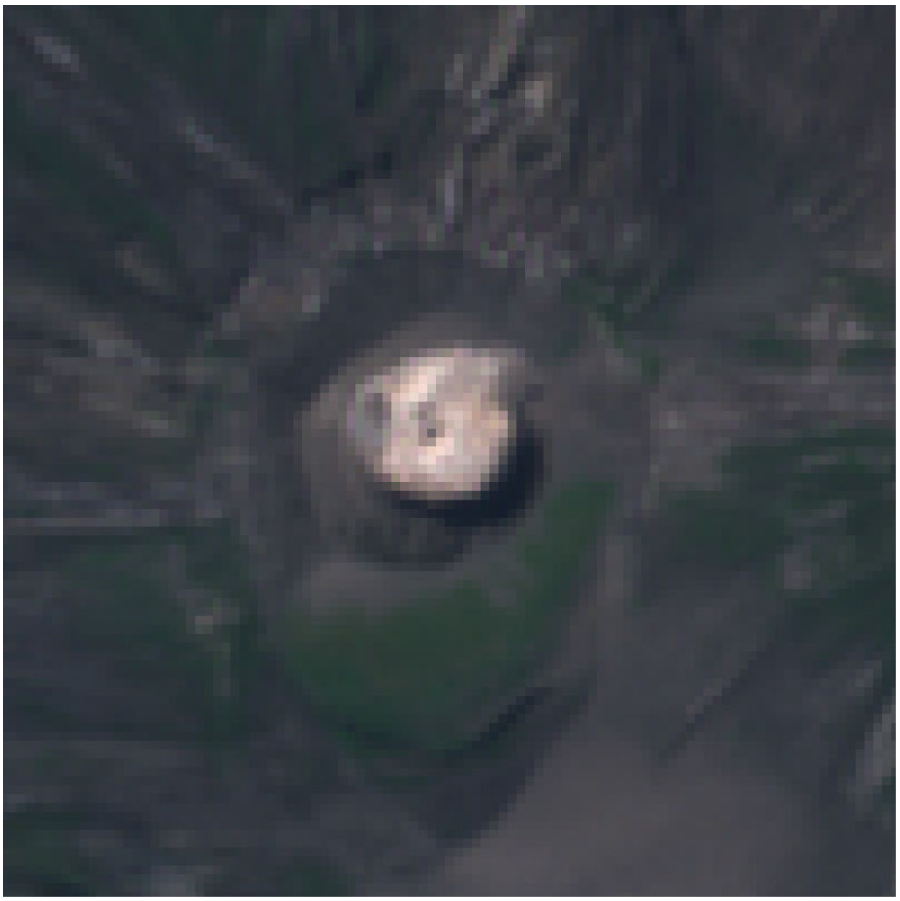

S5 Sentinel 2 image of the crater of Oldoinyo Lengai on 20th December 2020.