Supplementary material for:

Changes in seismic anisotropy at Ontake volcano: a tale of two eruptions

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Supplementary Information:

Additional figures showing: anisotropy as a function of depth for the 2007 and 2014 (Figure S1) events; and showing the splitting parameters at V.ONTA and V.ONTN as a function of time during the 2014 sequence (Figure S2).

Supplementary Tables (in additional txt files):
S1 – splitting parameters at each station for the 2007 eruption.

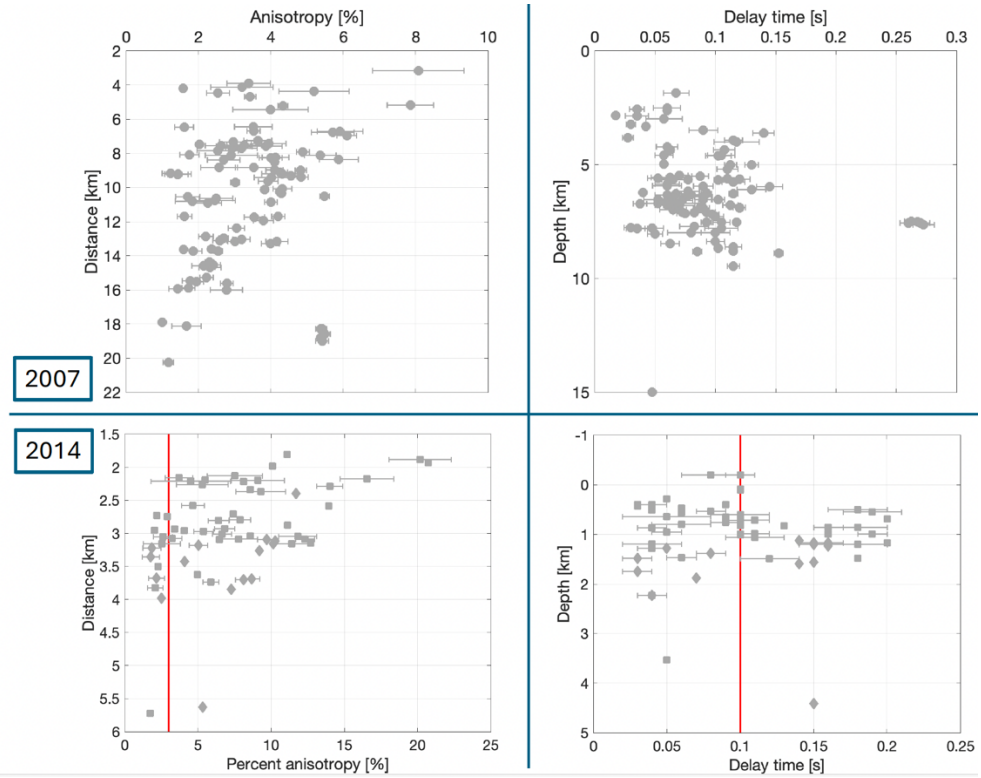

Figure S1. Anisotropy versus depth for 2007 (top) and 2014 (bottom) earthquakes. Average percentage anisotropy (Left) against source-receiver distance, and (Right) delay time, δt, as a function of depth, for all good quality splitting measurements. Each symbol represents one measurement with associated 2σ error

bars. In the lower diagrams (2014) squares are results for station V.ONTA and diamonds for V.ONTV, and the vertical red lines show the 2007 averages, for comparison.

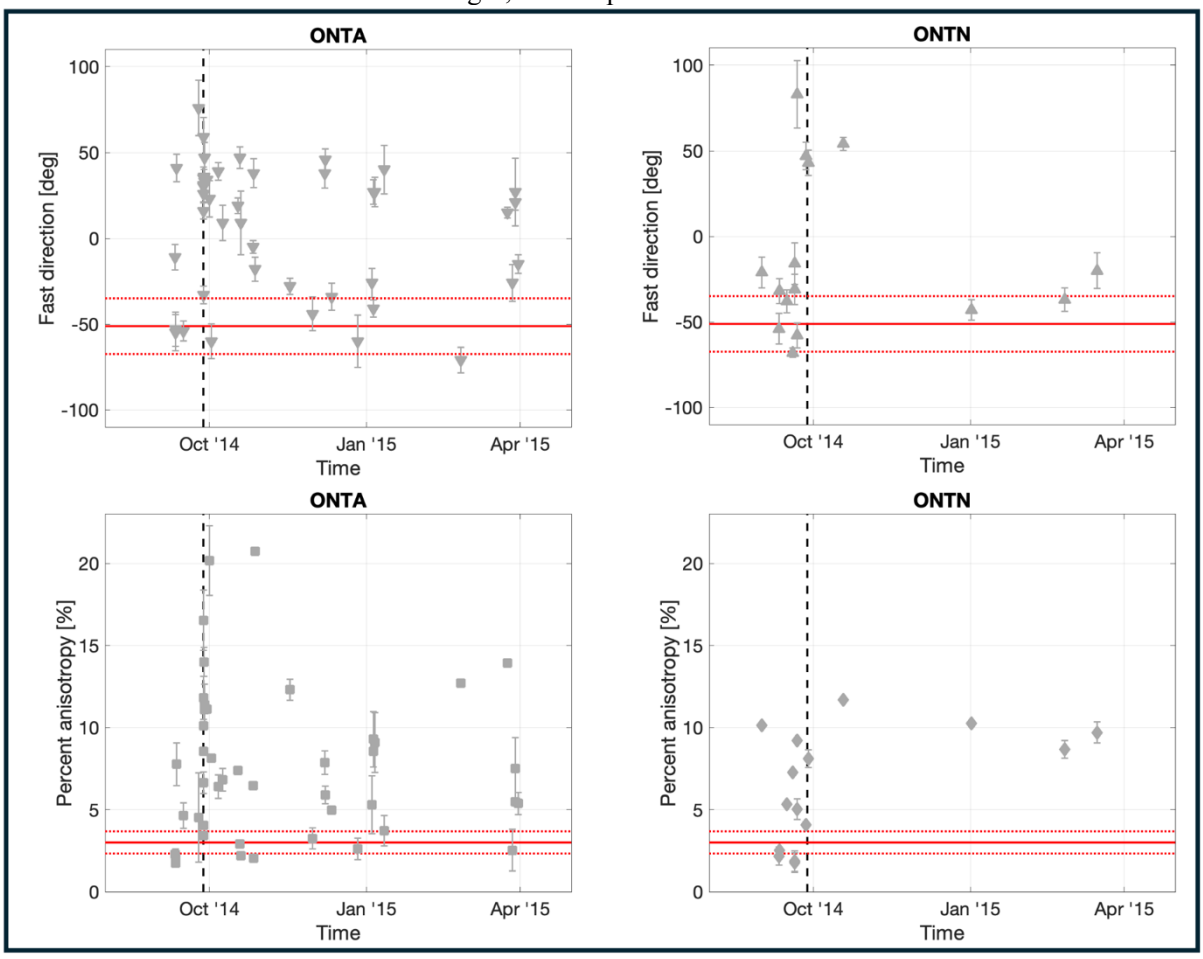

Figure S2. Splitting parameters (Top: fast shear wave polarisation, ϕ; Bottom: delay time expressed as percent anisotropy, before, during and after the 2014 eruption (dashed vertical line indicates date of eruption) for stations V.ONTA (left) and V.ONTN (right). The average splitting parameters in 2007 for V.ONTA are shown as a horizontal red line and standard deviation is shown by the horiztonal dashed red lines

		δt (s)		*A* (%)		*Φ* (□)	
		Mean	**Std.**	**Mean**	**Std.**	**Mean**	**Std.**
All	**2007 (99)**	0.09	0.05	3.38	1.44	78.34	39.28
	Before (31)	0.11	0.07	3.79	1.38	76.58	36.38
	After (68)	0.08	0.04	3.20	1.44	79.14	40.77
N.KADH	**2007 (23)**	0.09	0.02	3.54	0.98	-84.78	21.15
	Before (7)	0.09	0.03	3.73	1.06	-78.67	8.89
	After (16)	0.09	0.02	3.46	0.96	-87.45	24.48
N.KSOH	**2007 (18)**	0.08	0.01	2.12	0.47	77.41	4.08

	Before (3)	0.10	0.01	2.77	0.22	78.50	2.55
	After (15)	0.08	0.01	1.99	0.40	77.19	4.36
N.NGWH	**2007 (15)**	0.17	0.08	3.97	1.26	41.06	23.48
	Before (7)	0.19	0.09	4.12	1.68	44.91	31.47
	After (8)	0.14	0.05	3.83	0.85	37.69	15.03
NU.MKO1	**2007 (16)**	0.07	0.03	3.99	1.69	44.64	34.57
	Before (7)	0.07	0.03	3.67	1.49	46.75	33.93
	After (9)	0.06	0.04	4.24	1.87	43.00	37.02
NU.TKN1	**2007 (10)**	0.06	0.03	2.57	1.18	0.60	37.17
	Before (2)	0.10	0.00	4.17	0.21	64.40	5.73
	After (8)	0.05	0.02	2.17	0.93	-15.35	17.84
V.ONTA	**2007 (7)**	0.10	0.02	4.42	1.01	-45.35	25.82
	Before (1)	0.13	0.00	5.87	0.00	-62.11	0.00
	After (6)	0.09	0.02	4.17	0.85	-42.55	27.10
NU.MUR	**2007 (4)**	0.08	0.03	3.98	1.51	59.70	3.22
	Before (2)	0.08	0.04	4.36	2.45	60.25	2.51
	After (2)	0.08	0.02	3.59	0.47	59.15	4.85
N.ASSH	**2007 (2)**	0.11	0.01	5.93	2.72	-67.38	29.24
	Before (1)	0.12	0.00	4.00	0.00	-46.70	0.00
	After (1)	0.11	0.00	7.86	0.00	-88.05	0.00
NU.KID1	**2007 (2)**	0.05	0.00	1.31	0.43	-56.57	23.29
	Before (1)	0.05	0.00	1.62	0.00	-73.03	0.00
	After (1)	0.05	0.00	1.00	0.00	-40.10	0.00
NU.MKS	**2007 (1)**	0.06	0.00	3.52	0.00	21.06	0.00
	Before (0)						
	After (1)	0.06	0.00	3.52	0.00	21.06	0.00
ROPW	**2007 (1)**	0.03	0.00	1.61	0.00	81.45	0.00
	Before (0)						
	After (1)	0.03	0.00	1.61	0.00	81.45	0.00

Table S1. Mean and standard deviation of δt, average percentage anisotropy (A) and fast strike (ϕ) from all results and results from individual stations for all 2007 events, and for those before and after the late March 2007 eruption. Number of measurements for each category is shown in parentheses.