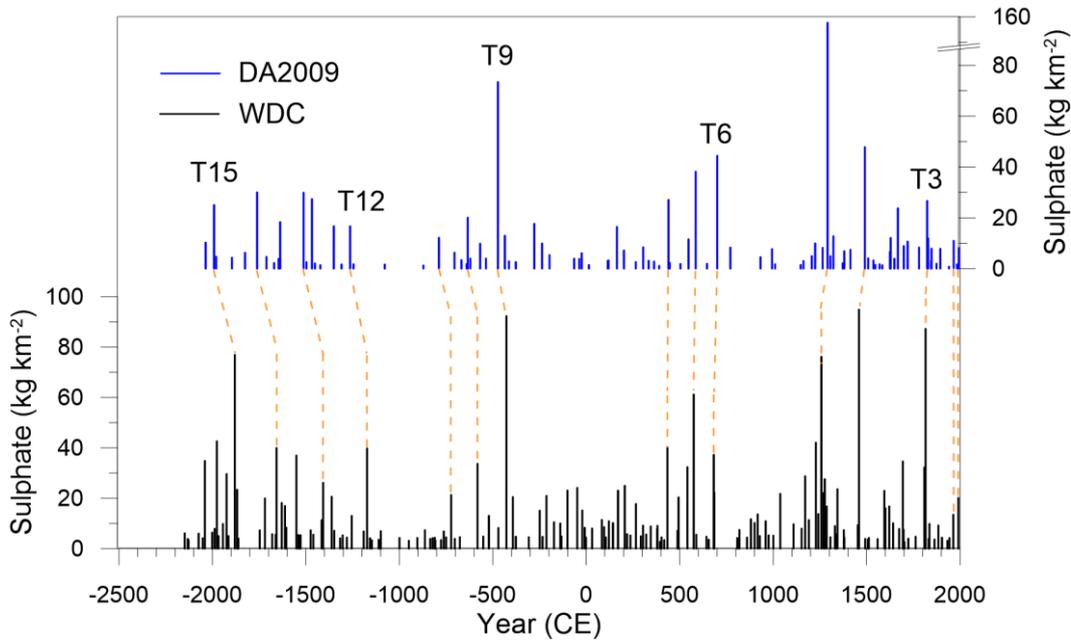


Supplement of

**An Ice Core Record of Volcanic Eruptions for the past 4000 years
from Dome A, Antarctica**

Chunlei An et al.

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10 **Figure S1: Comparison of volcanic signals between the DA2009 ice core and the West Antarctic Ice Sheet (WAIS) Divide ice core (WDC; Cole-Dai et al., 2021).**

Table S1: Volcanic tie-points identified between the DA2009 and WDC records.

Event Number	DA2009 Event Flux (kg km ⁻²)	WDC Event Flux (kg km ⁻²)	Year (CE) (WDC chronology)
1 (Pinatubo)	8.23	20.16	1991
2 (Agung)	10.99	13.49	1964
3 (Tambora)	11.89	87.26	1815
4 (Kuwea)	47.87	94.91	1459
5 (Samalas)	157.65	76.15	1258
6	44.44	37.22	682
7	38.22	61.17	575
8	27.10	40.24	434
9	73.47	92.33	-427
10	20.12	33.7	-582
11	12.16	21.3	-723
12	16.70	39.79	-1173
13	29.95	26.14	-1408

14	30.05	39.96	-1657
15	25.05	76.91	-1880

Table S2: Volcanic events found in the DA2009 ice core.

Event Number	Start Date (CE)	Depth (cm)	Depth w.e. (cm)	Duration (yr)	Event Flux (kg/km ²)
1	1991.0	119.50	40.46	3.10	8.23
2	1982.3	177.19	60.42	1.46	1.73
3	1964.0	295.47	102.19	3.08	10.99
4	1936.4	454.29	160.08	0.77	0.82
5	1885.7	733.24	266.65	3.27	7.85
6	1863.3	851.29	313.61	1.67	1.98
7	1834.6	998.97	373.88	2.55	7.91
8	1832.0	1011.90	379.24	1.70	3.15
9	1815.0	1097.42	415.00	2.55	11.89
10	1809.3	1127.12	427.55	3.28	26.71
11	1763.1	1360.67	528.57	4.36	8.38
12	1699.6	1667.97	667.69	2.68	10.67
13	1677.4	1771.80	716.25	3.85	8.93
14	1644.7	1922.08	787.92	5.48	23.79
15	1624.5	2013.00	832.07	1.78	3.95
16	1603.8	2105.00	877.33	3.61	12.12
17	1600.2	2121.00	885.26	1.81	6.66
18	1556.5	2311.17	980.90	0.91	1.37
19	1540.9	2377.92	1015.06	1.86	1.77
20	1517.5	2477.22	1066.44	0.94	1.49
21	1506.9	2521.47	1089.55	2.98	3.29
22	1477.8	2642.00	1153.17	2.02	4.09
23	1459.0	2719.23	1194.43	5.25	47.87
24	1380.9	3044.69	1372.65	4.06	7.49
25	1347.6	3179.56	1448.50	3.14	6.90
26	1339.4	3212.58	1467.24	1.02	2.12
27	1289.2	3412.03	1581.92	4.29	12.81

28	1272.7	3476.40	1619.45	1.13	4.98
29	1258.0	3533.60	1653.02	10.19	157.65
30	1231.9	3637.58	1714.54	3.00	8.26
31	1192.8	3791.75	1806.96	4.03	9.97
32	1175.2	3859.97	1848.31	2.16	4.96
33	1132.2	4025.65	1949.85	1.85	3.06
34	1117.3	4082.30	1984.93	0.93	1.49
35	983.9	4578.17	2299.75	0.98	1.78
36	968.1	4635.60	2337.09	3.97	7.75
37	907.8	4852.00	2479.35	2.03	4.57
38	750.8	5399.11	2849.81	4.71	8.33
39	682.0	5632.14	3012.10	8.02	44.44
40	631.3	5809.78	3137.54	0.95	1.96
41	575.0	6004.64	3276.82	5.57	38.22
42	538.1	6125.92	3364.37	6.26	11.58
43	495.8	6263.59	3464.54	1.02	1.90
44	440.3	6442.71	3596.10	1.04	2.30
45	434.0	6462.77	3610.92	5.21	27.10
46	386.8	6617.75	3725.97	0.99	1.14
47	361.2	6701.23	3788.35	1.95	2.81
48	333.8	6790.20	3855.15	1.98	3.15
49	306.0	6879.80	3922.73	2.98	8.45
50	268.8	6999.32	4013.39	1.04	2.66
51	209.0	7190.03	4159.17	3.06	7.18
52	173.8	7301.42	4244.95	4.30	16.46
53	131.2	7435.53	4348.83	1.04	3.28
54	127.0	7448.60	4358.99	2.08	3.12
55	32.2	7743.62	4589.89	1.19	1.45
56	-4.2	7856.14	4678.75	2.23	6.11
57	-16.7	7894.33	4709.01	2.39	3.84
58	-42.5	7973.50	4771.87	3.43	3.97
59	-166.8	8351.57	5074.85	3.02	5.42
60	-204.5	8465.00	5166.61	3.80	9.93

61	-243.8	8582.88	5262.37	5.11	17.71
62	-337.4	8861.87	5490.57	2.08	2.62
63	-371.4	8962.60	5573.48	0.98	2.91
64	-392.3	9024.28	5624.38	4.12	12.97
65	-427.0	9126.36	5708.83	7.96	73.47
66	-488.7	9304.76	5857.06	2.00	4.03
67	-518.7	9391.24	5929.18	5.01	9.87
68	-569.1	9535.91	6050.24	1.97	4.03
69	-582.0	9572.77	6081.16	4.97	20.12
70	-587.8	9590.00	6095.63	1.00	1.86
71	-612.7	9664.77	6158.47	2.11	3.40
72	-647.0	9767.07	6244.64	3.23	6.35
73	-723.0	9993.00	6435.74	4.05	12.16
74	-801.9	10218.30	6627.30	1.02	1.29
75	-997.8	10773.00	7102.76	1.01	1.68
76	-1156.0	11217.12	7486.77	1.06	1.76
77	-1173.0	11264.71	7528.07	4.61	16.70
78	-1216.2	11386.00	7633.45	1.07	1.69
79	-1255.7	11496.50	7729.59	6.53	16.73
80	-1323.3	11685.50	7894.32	1.13	1.40
81	-1350.6	11762.00	7961.09	1.20	2.09
82	-1366.0	11804.86	7998.52	6.14	27.40
83	-1393.6	11881.91	8065.86	1.04	2.64
84	-1408.0	11922.00	8100.91	6.03	29.95
85	-1533.6	12251.27	8389.22	3.89	18.34
86	-1538.5	12264.00	8400.38	0.97	1.50
87	-1542.3	12273.95	8409.11	1.90	3.91
88	-1566.0	12336.15	8463.65	0.95	2.25
89	-1607.3	12444.08	8558.34	1.16	4.69
90	-1657.0	12574.11	8672.49	7.06	30.05
91	-1719.8	12744.39	8822.06	2.17	6.28
92	-1787.2	12926.79	8982.36	3.26	4.37
93	-1868.9	13148.00	9176.82	2.22	4.75

94	-1880.0	13178.00	9203.20	5.54	25.05
95	-1923.2	13295.00	9306.05	3.51	10.26

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