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Isotopic analysis of snow from Dome C indicates changes in the source of atmospheric lead over the last fifty years in East Antarctica

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Sources and recent trend of atmospheric lead over the last fifty years
by isotopic measurements on snow from Dome C, East Antarctic Plateau

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Supporting Information

Table S1. Lead concentration and isotopic ratios in the snow samples from Dome C
(uncertainties are 95%-confidence intervals)

Depth (cm)	Year (AD)	Pb (pg/g)	^{208/207} Pb	U	^{206/207} Pb	U
1.7	2017.5	4.4	2.436	0.006	1.170	0.005
5.0	2017.1	5.0	2.429	0.015	1.162	0.006
8.3	2016.7	6.1	2.418	0.010	1.156	0.006
11.6	2016.3	4.1	2.473	0.007	1.208	0.004
14.9	2015.9	7.9	2.431	0.008	1.165	0.004
18.2	2015.5	2.1	2.432	0.012	1.177	0.007
21.5	2015.1	3.3	2.441	0.006	1.171	0.004
24.8	2014.7	2.5	2.440	0.013	1.179	0.004
28.1	2014.3	27.0	2.413	0.003	1.135	0.002
31.4	2013.9	3.7	2.391	0.008	1.146	0.006
37.5	2013.2	2.4	2.444	0.010	1.170	0.003
40.5	2012.8	2.4	2.441	0.010	1.181	0.004
46.5	2012.1	2.2	2.431	0.021	1.181	0.011
49.5	2011.8	21.8	2.412	0.007	1.145	0.003
52.5	2011.4	2.5	2.380	0.007	1.132	0.007
55.5	2011.1	8.7	2.428	0.018	1.164	0.005
58.5	2010.7	5.2	2.457	0.007	1.189	0.006
61.5	2010.4	5.0	2.442	0.006	1.163	0.005
64.7	2010.0	5.5	2.439	0.008	1.164	0.004
68.0	2009.6	4.0	2.433	0.011	1.165	0.003
71.3	2009.2	4.2	2.437	0.006	1.173	0.002
74.6	2008.8	9.3	2.442	0.005	1.162	0.003
77.9	2008.4	2.1	2.447	0.014	1.172	0.004
81.2	2008.0	2.6	2.396	0.010	1.146	0.006
84.5	2007.6	0.4	2.410	0.016	1.174	0.010
87.8	2007.2	2.0	2.435	0.012	1.164	0.014
91.1	2006.8	11.6	2.411	0.008	1.150	0.004
94.4	2006.4	11.0	2.426	0.010	1.162	0.002
101.4	2005.6	12.7	2.422	0.006	1.160	0.004
105.0	2005.2	5.6	2.441	0.010	1.173	0.006
108.6	2004.8	5.2	2.438	0.010	1.179	0.007
112.2	2004.3	9.1	2.405	0.006	1.155	0.003
115.8	2003.9	13.7	2.421	0.005	1.157	0.003
119.4	2003.5	4.4	2.421	0.006	1.155	0.004

123.0	2003.0	4.8	2.455	0.009	1.201	0.006
126.6	2002.6	5.8	2.435	0.006	1.180	0.004
130.2	2002.2	6.7	2.417	0.011	1.162	0.007
133.9	2001.8	4.4	2.443	0.013	1.192	0.006
137.7	2001.3	5.4	2.433	0.009	1.184	0.002
141.5	2000.8	1.8	2.416	0.015	1.164	0.005
145.3	2000.4	2.0	2.405	0.011	1.154	0.006
149.1	1999.9	4.4	2.429	0.004	1.173	0.004
152.9	1999.5	3.8	2.445	0.023	1.167	0.013
156.7	1999.0	5.9	2.383	0.010	1.141	0.008
160.5	1998.6	9.1	2.405	0.009	1.142	0.004
164.3	1998.1	4.5	2.422	0.012	1.163	0.004
168.1	1997.7	6.5	2.418	0.003	1.160	0.002
171.7	1997.3	6.7	2.418	0.011	1.162	0.002
175.1	1996.9	8.0	2.416	0.005	1.150	0.003
178.5	1996.5	4.3	2.423	0.014	1.164	0.006
181.9	1996.0	5.2	2.415	0.010	1.151	0.003
185.3	1995.6	6.5	2.426	0.007	1.162	0.002
188.7	1995.2	14.0	2.427	0.005	1.163	0.004
192.1	1994.8	8.5	2.426	0.002	1.161	0.003
195.5	1994.4	8.5	2.415	0.022	1.161	0.009
198.9	1994.0	4.7	2.420	0.010	1.159	0.003
202.3	1993.6	7.1	2.405	0.008	1.141	0.003
205.8	1993.2	5.7	2.400	0.007	1.144	0.004
209.3	1992.8	5.0	2.418	0.009	1.142	0.007
212.8	1992.4	5.6	2.403	0.008	1.141	0.005
216.3	1992.0	7.6	2.423	0.004	1.156	0.003
219.8	1991.5	8.3	2.423	0.009	1.155	0.004
223.3	1991.1	6.7	2.424	0.005	1.159	0.004
226.8	1990.7	15.2	2.418	0.005	1.151	0.003
230.3	1990.3	15.4	2.423	0.005	1.155	0.003
233.8	1989.9	8.5	2.409	0.009	1.145	0.006
237.3	1989.5	10.5	2.407	0.006	1.142	0.004
240.8	1989.0	10.6	2.427	0.006	1.150	0.004
244.4	1988.6	20.2	2.410	0.009	1.139	0.001
248.0	1988.2	9.4	2.406	0.006	1.141	0.002
251.6	1987.8	9.8	2.386	0.014	1.132	0.006
255.2	1987.3	7.7	2.415	0.009	1.144	0.003
258.8	1986.9	4.0	2.410	0.013	1.154	0.005
262.4	1986.5	6.4	2.395	0.009	1.134	0.004
266.0	1986.1	4.0	2.394	0.012	1.132	0.005
269.6	1985.6	7.7	2.424	0.008	1.149	0.004
273.2	1985.2	5.4	2.402	0.009	1.140	0.005
276.8	1984.8	7.6	2.408	0.008	1.140	0.003
280.4	1984.3	7.7	2.406	0.010	1.142	0.005
284.0	1983.9	9.5	2.404	0.008	1.136	0.002
287.6	1983.5	5.3	2.417	0.009	1.161	0.004
291.2	1983.1	12.1	2.410	0.013	1.154	0.006
294.8	1982.6	19.2	2.419	0.005	1.158	0.004
298.4	1982.2	25.4	2.410	0.004	1.152	0.004
302.0	1981.8	24.5	2.413	0.009	1.156	0.007

305.6	1981.3	12.1	2.413	0.010	1.146	0.004
309.2	1980.9	12.0	2.413	0.004	1.155	0.001
312.6	1980.5	9.8	2.406	0.006	1.147	0.003
315.8	1980.1	8.7	2.394	0.010	1.143	0.004
319.0	1979.8	8.7	2.429	0.006	1.182	0.002
322.2	1979.4	8.3	2.441	0.006	1.185	0.004
325.4	1979.0	22.4	2.436	0.005	1.176	0.003
328.6	1978.6	15.4	2.424	0.008	1.159	0.008
331.8	1978.2	9.0	2.419	0.008	1.163	0.003
338.2	1977.5	12.8	2.424	0.004	1.160	0.003
341.4	1977.1	10.8	2.445	0.008	1.177	0.004
345.0	1976.7	5.9	2.433	0.006	1.174	0.003
348.9	1976.2	8.9	2.419	0.007	1.156	0.005
352.8	1975.7	8.7	2.417	0.014	1.162	0.007
356.7	1975.3	5.0	2.407	0.014	1.172	0.019
360.6	1974.8	11.1	2.417	0.009	1.153	0.006
364.5	1974.4	12.1	2.404	0.005	1.141	0.002
368.4	1973.9	9.5	2.414	0.009	1.142	0.007
372.3	1973.4	13.4	2.427	0.011	1.164	0.003
376.2	1973.0	11.2	2.411	0.006	1.147	0.002
380.1	1972.5	7.7	2.416	0.003	1.149	0.003
384.0	1972.0	7.8	2.386	0.010	1.121	0.006
387.9	1971.6	8.0	2.380	0.008	1.123	0.003
391.8	1971.1	7.7	2.381	0.007	1.122	0.006

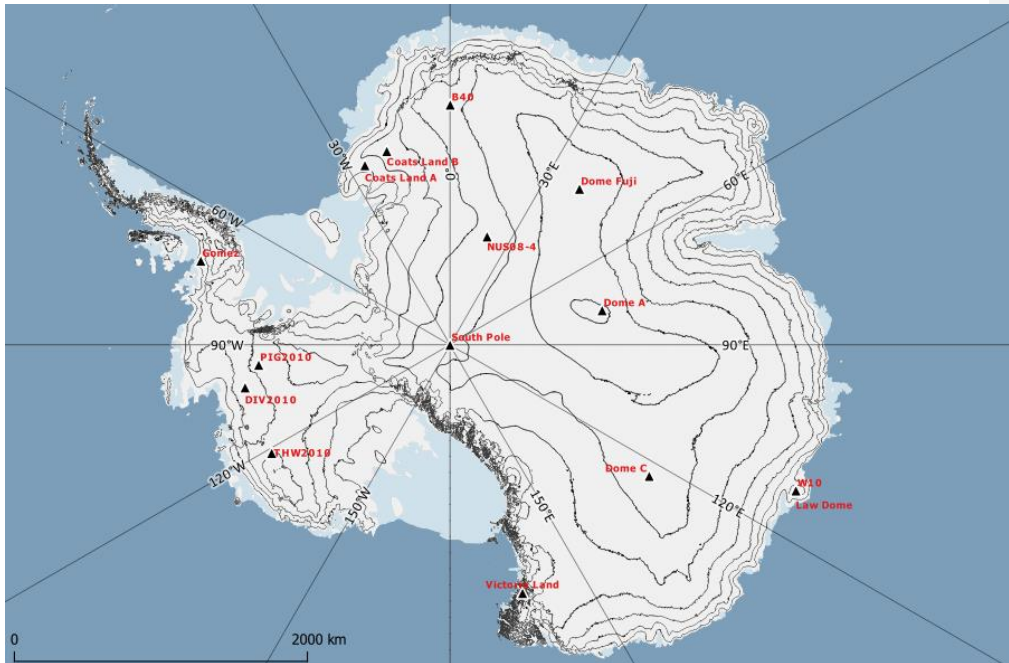
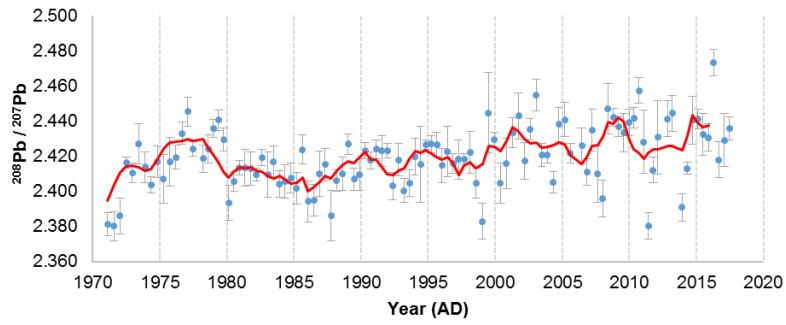
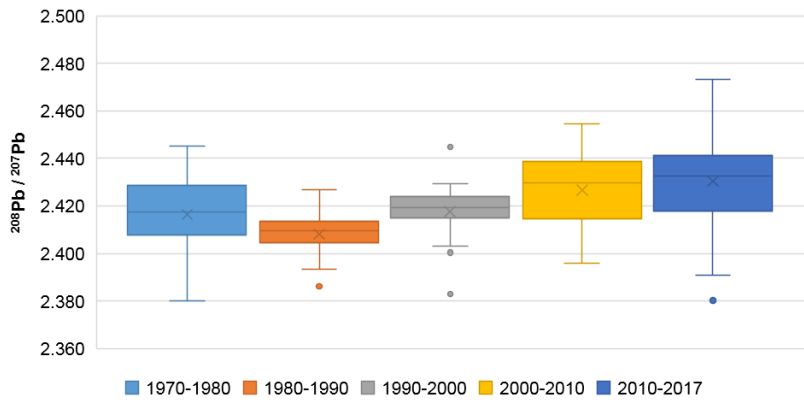


Figure S1. Map of Antarctica showing the locations of Dome C and the other sampling locations referred to in the text. Picture produced by QGIS software with Quantarctica library of Norwegian Polar Institute.

Commentato [b1]: mappa modificata (errore nella trascrizione di un nome)



(a)



(b)

Figure S2. Temporal trend of $^{208}\text{Pb}/^{207}\text{Pb}$ isotopic ratio in snow from Dome C. (a) single data with associated uncertainty and five-point running average; (b) boxplots of data grouped by decades.

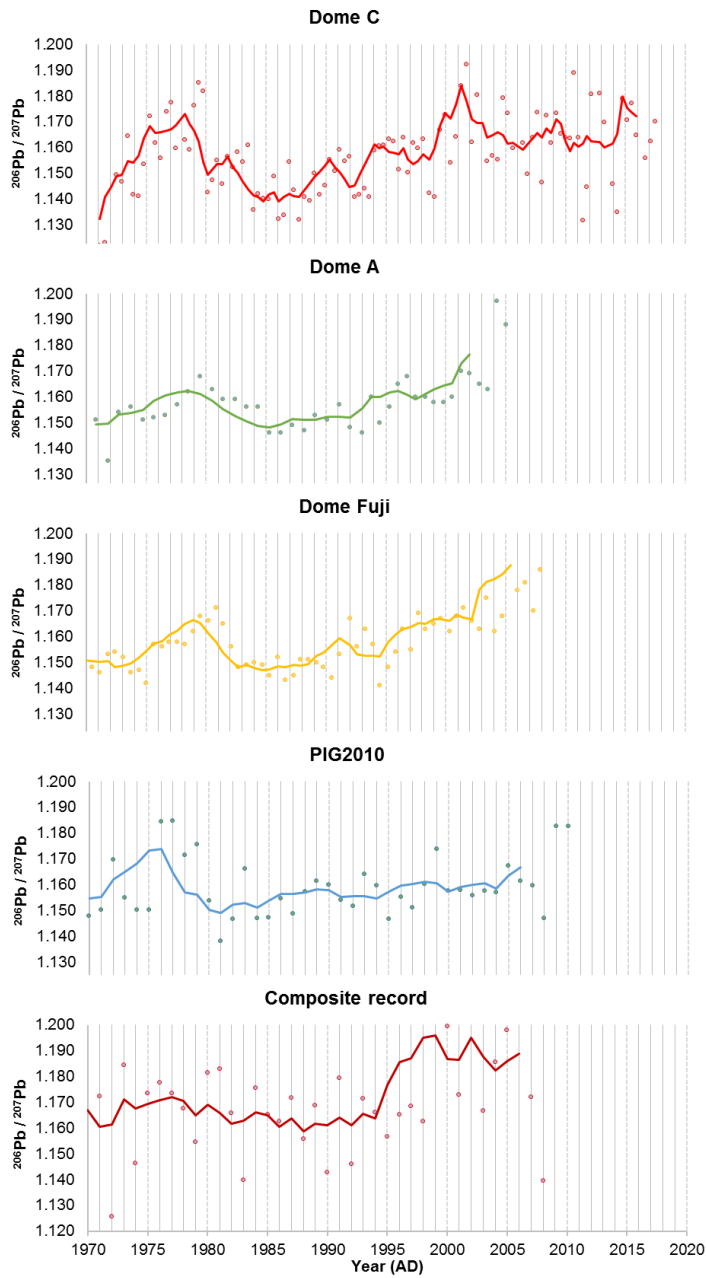


Figure S3. Comparison of the temporal trends of $^{206}\text{Pb}/^{207}\text{Pb}$ isotopic ratio in recent snow from various Antarctic sites: Dome C (this work), Dome A (Chang et al., 2016), Dome Fuji (Chang et al., 2016), PIG2010 ((Mc Connell et al., 2014) and a composite Pb record from 16 ice cores across Antarctica (Mc Connell et al., 2014). See Figure S1 for locations.