Supplementary Information For: Large-scale features of Last Interglacial climate: Results from the Coupled Model Intercomparison Project (CMIP6) and Paleoclimate Modeling Intercomparison Project (PMIP4)

December 31, 2019

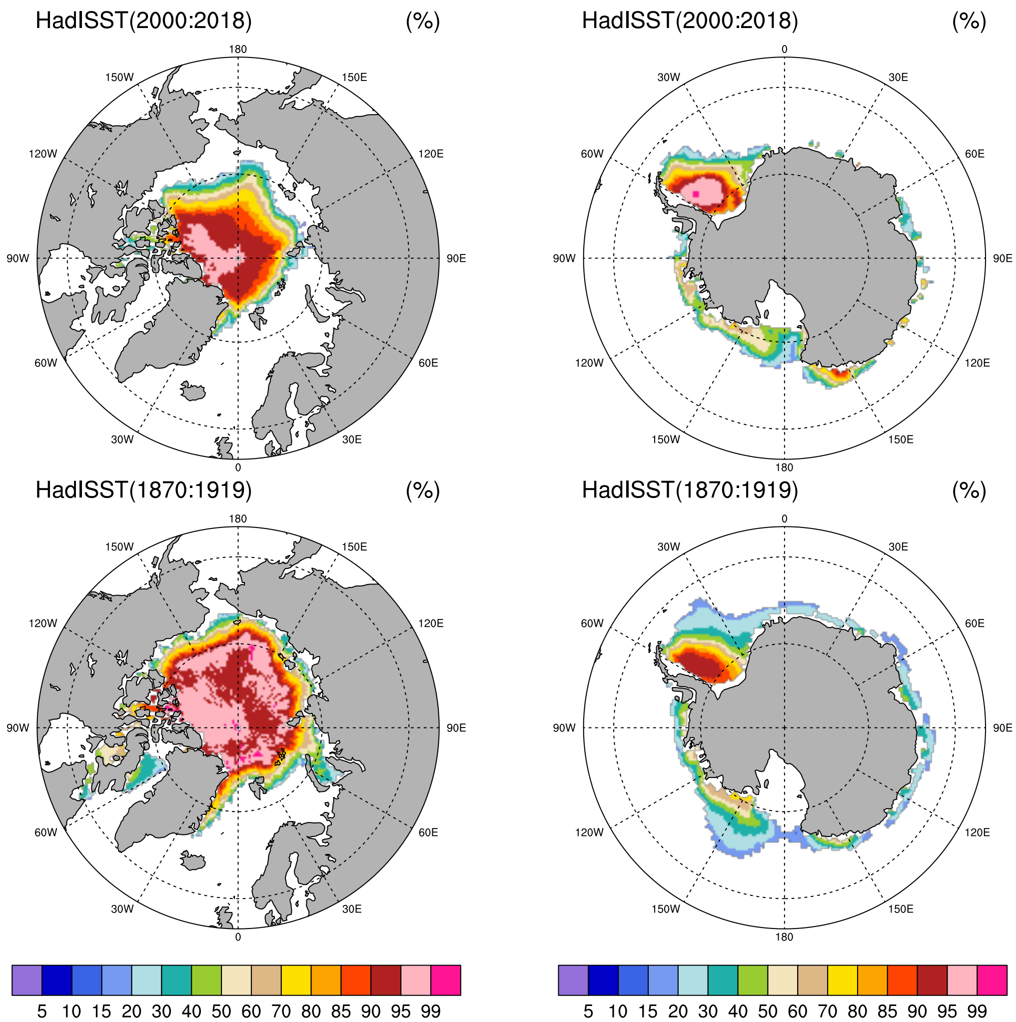

Figure S1. The observed 15% concentration boundaries for the 2000-2018 and 1870-1899 CE intervals based on the Hadley Centre Sea Ice and Sea Surface Temperature (HadISST; Rayner et al., 2003) data set.

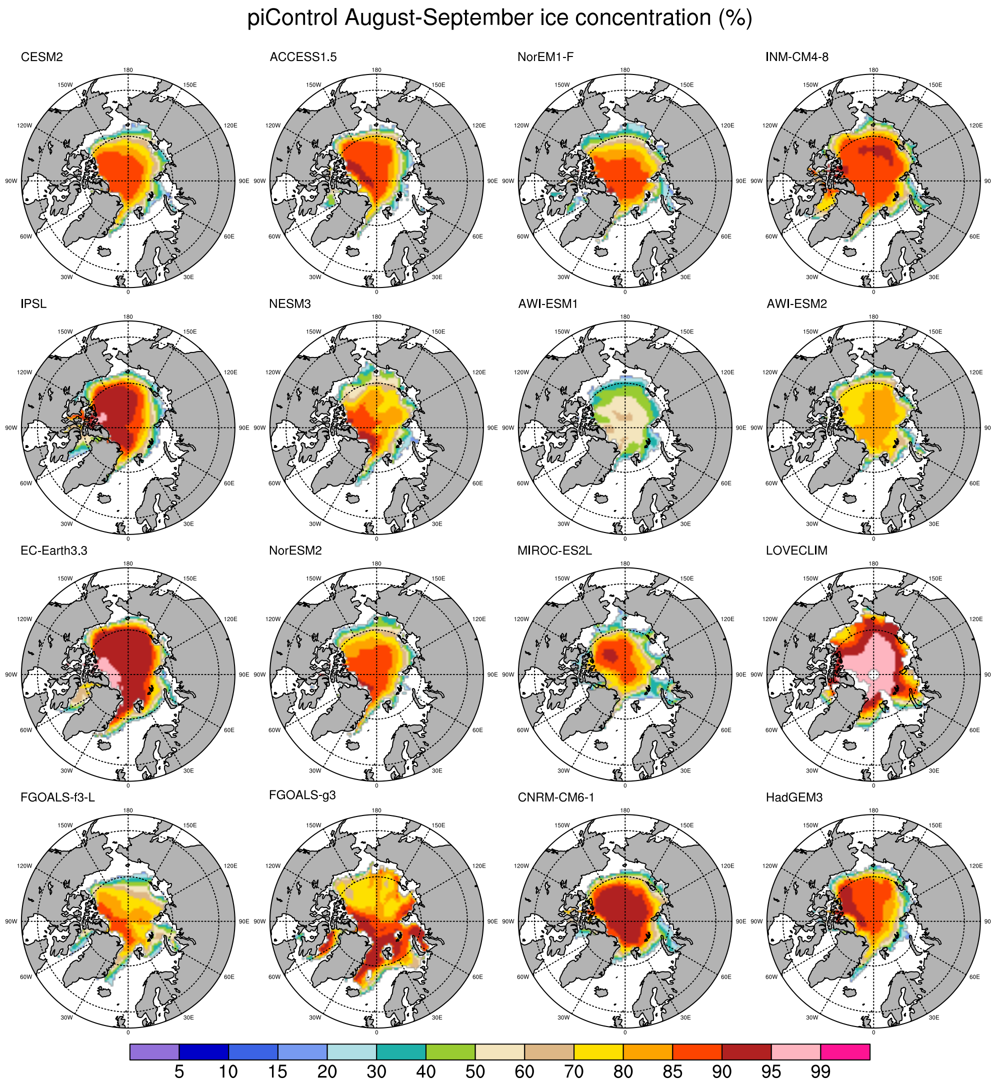

Figure S2. The *piControl* sea ice concentration in the Northern Hemisphere for August-September for the individual models included in Figures 4, 7, and 8. Also shown are the observed 15% concentration boundaries for the 2000-2018 and 1870-1899 CE intervals based on the Hadley Centre Sea Ice and Sea Surface Temperature (HadISST; Rayner et al., 2003) data set.

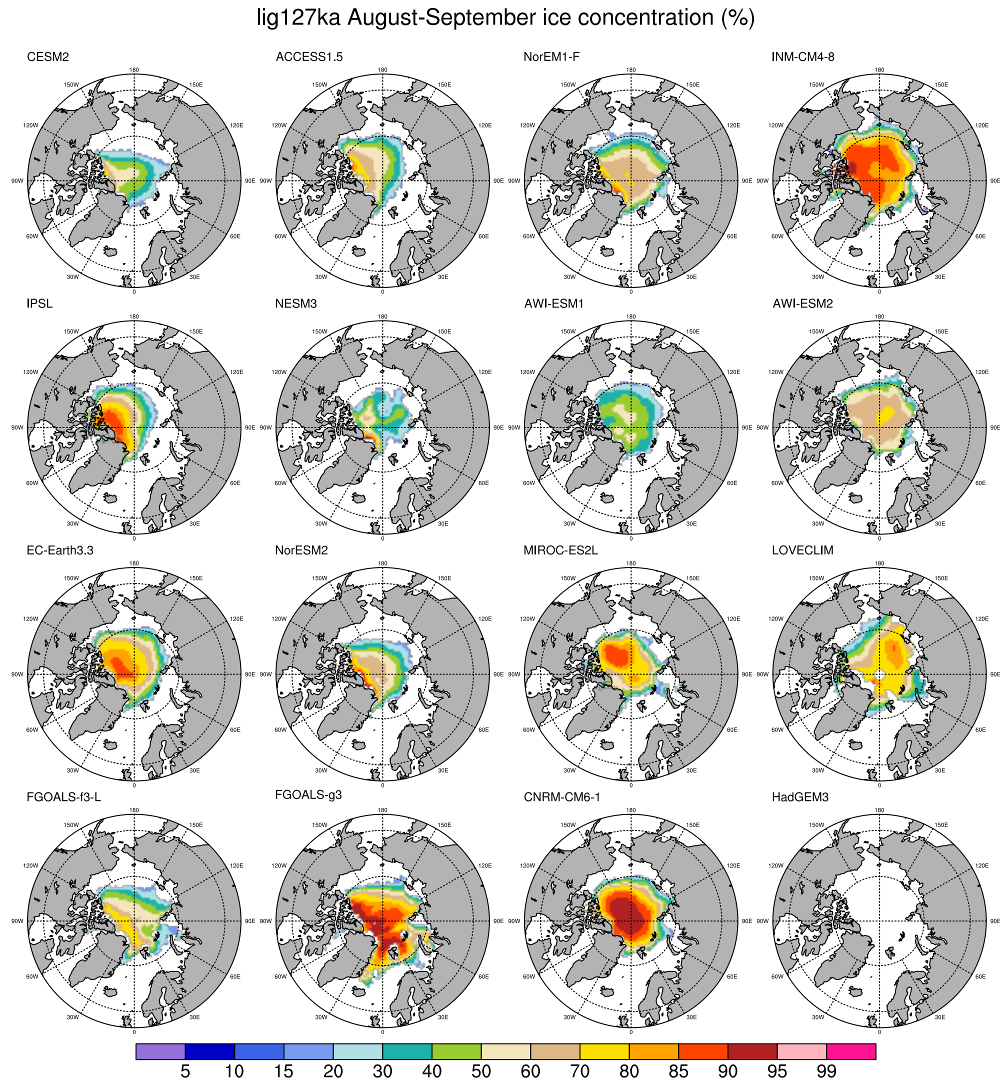

Figure S3. The *lig127k* sea ice concentration in the Northern Hemisphere for August-September for the individual models included in Figures 4, 7, and 8.

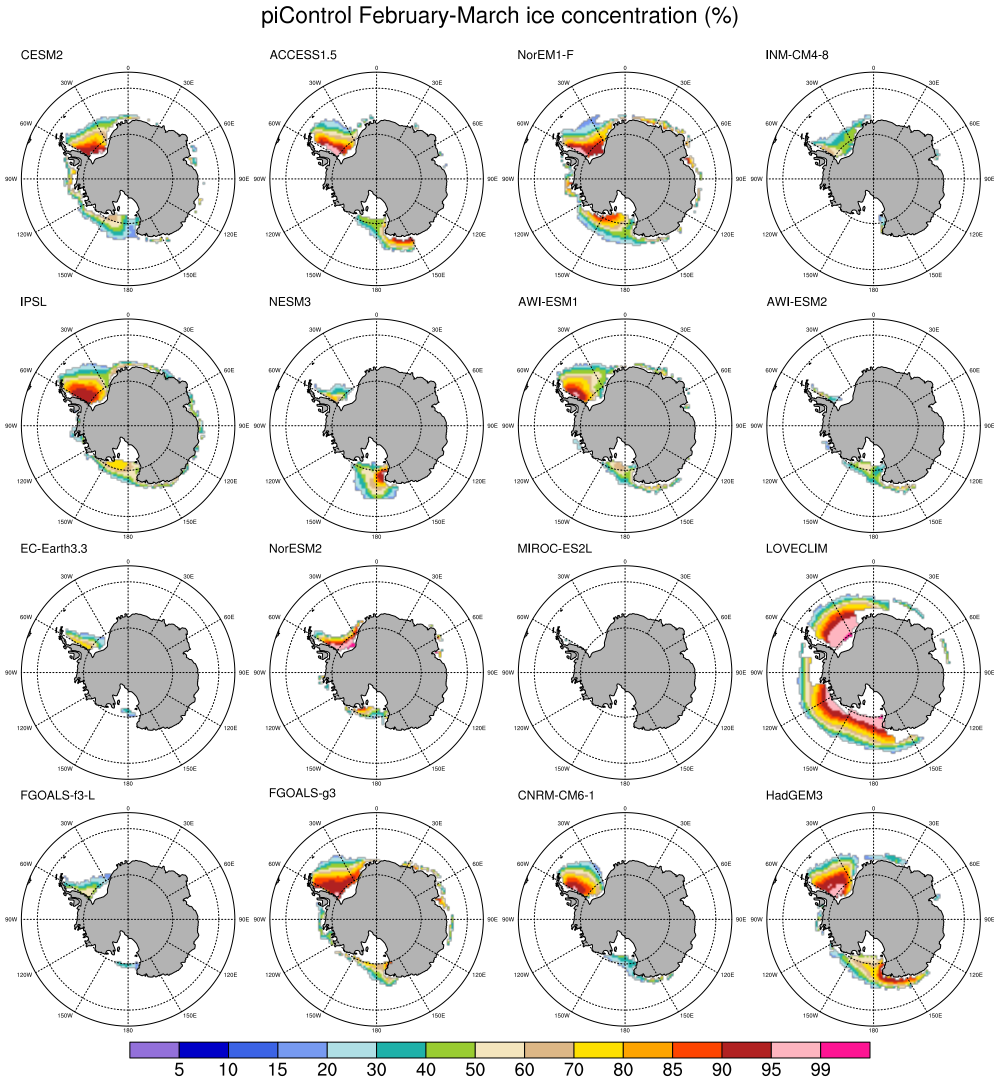

Figure S4. Same as Figure S2 but for the Southern Hemisphere for February-March.

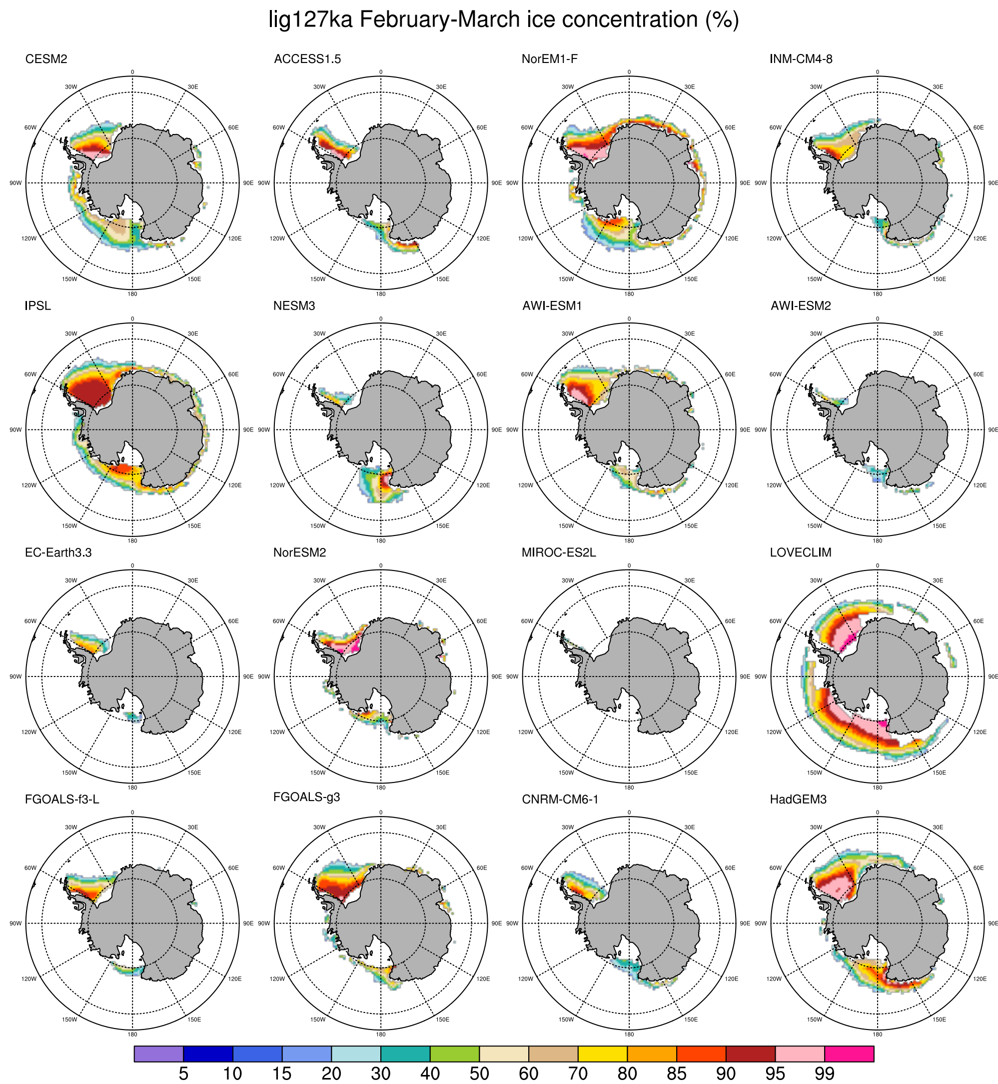

Figure S5. Same as Figure S4 but for the Southern Hemisphere for February-March.

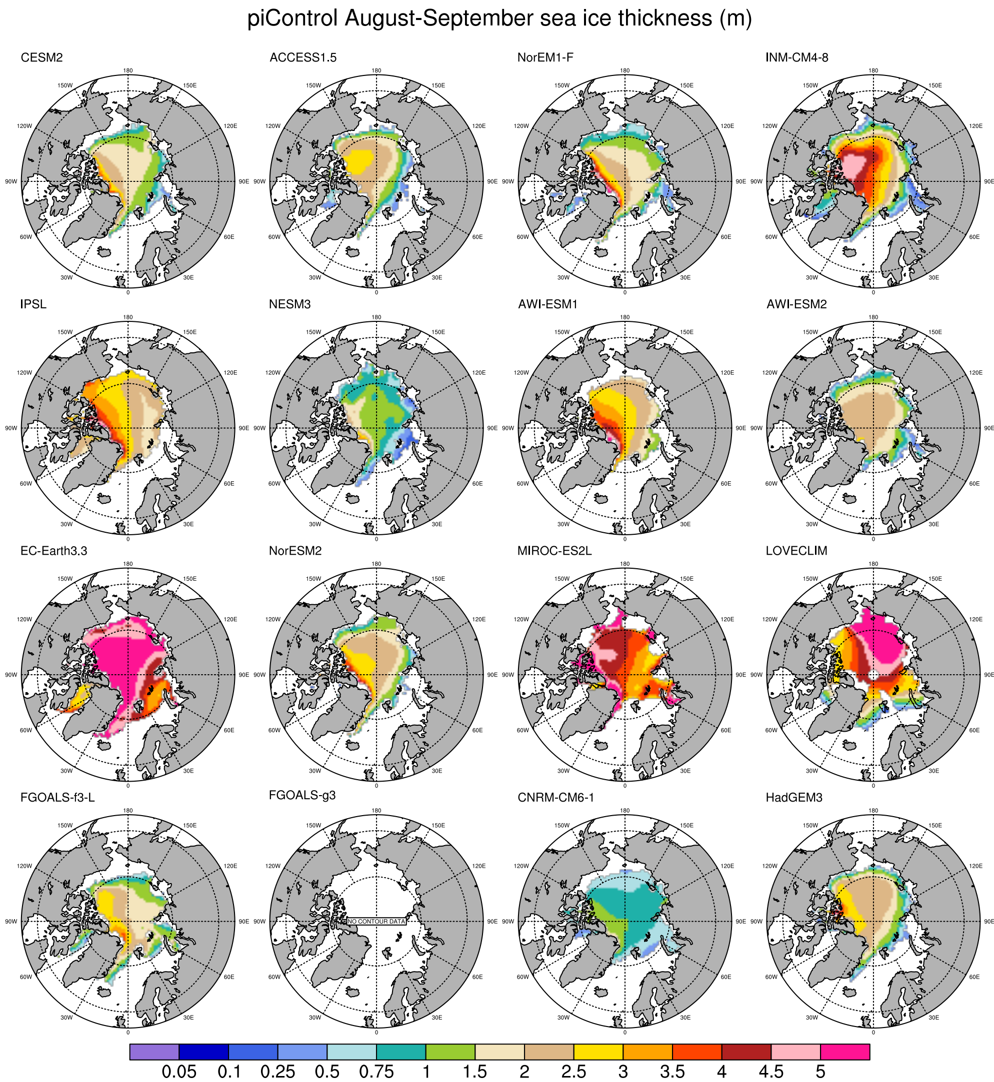

Figure S6. The annual *piControl* sea ice thickness in the Northern Hemisphere for the individual models included in Figure 8.

Table S1. Hoffman et al marine reconstruction of SST for 127 ka

	Latitude	Longitude	SST reconstruction method	Inferred proxy signal	[127ka -2SD] Abs. Temp. (°C)	**[127ka Mean] Abs. Temp. (°C)**	[127ka +2SD] Abs. Temp. (°C)	**[1870-1889] HadISST Temp. (°C**	[127ka -2SD] Temp. Ano. (°C)	**[127ka Mean] Temp. Ano. (°C)**	[127ka +2SD] Temp. Ano. (°C)
North Atlantic											
GIK15637-1	27	-18.98	Forams	Winter	17.9	**19.8**	21.7	**19.5**	-1.6	**0.3**	2.2
M12392-1	25.16	-16.85	Forams	Winter	11.9	**14.4**	16.9	**18.9**	-7.0	**-4.5**	-2.0
TR126-29	21.33	-93.95	Forams	Winter	20.1	**21.9**	23.7	**23.4**	-3.3	**-1.5**	0.3
TR126-23	20.48	-95.62	Forams	Winter	19.4	**21.2**	23.0	**23.0**	-3.6	**-1.8**	0.0
V22-196	13.83	-18.97	Forams	Winter	17.2	**21.2**	25.3	**21.5**	-4.3	**-0.3**	3.8
V28-127	11.65	-80.13	Forams	Winter	23.2	**26.0**	28.8	**26.8**	-3.6	**-0.8**	2.0
V25-59	1.37	-33.48	Forams	Winter	22.5	**24.6**	26.6	**27.2**	-4.7	**-2.6**	-0.6
Pacific Ocean											
Y7211-1	43.25	-126.38	Radiolaria	Winter	8.6	**13.9**	19.2	10.2	-15.5	**-10.2**	-4.9
V28-238	1.02	160.48	Forams	Winter	24.7	**27.4**	30.0	**29.1**	-4.4	**-1.7**	0.9
Y71-6-12	-16.45	-77.57	Radiolaria	Winter	13.1	**18.7**	24.3	**16.7**	-3.6	**2.0**	7.6
RC15-61	-40.62	-77.2	Radiolaria	Winter	1.1	**4.1**	7.2	**11.0**	-9.9	**-6.9**	-3.8
Indian Ocean											
V34-88	16.52	59.53	Forams	Winter	21.9	**24.5**	27.2	**24.9**	-3.0	**-0.4**	2.3
RC12-339	9.13	90.03	Forams	Winter	24.3	**26.6**	28.8	**27.8**	-3.5	**-1.2**	1.0
V28-345	-17.67	117.95	Forams	Winter	23.7	**25.9**	28.1	**25.1**	-1.4	**0.8**	3.0
MD73-25	-43.82	51.3	Radiolaria	Winter	2.5	**4.5**	6.4	**7.0**	-4.5	**-2.5**	-0.6
South Atlantic											
V22-182	-0.55	-17.27	Coccolithophora	Winter	20.1	**23.4**	26.8	**23.9**	-3.8	**-0.5**	2.9
V22-182	-0.55	-17.27	Forams	Winter	18.7	**21.2**	23.7	**23.9**	-5.2	**-2.7**	-0.2
GeoB1105	-1.67	-12.43	Forams	Winter	15.8	**18.8**	21.8	**23.1**	-7.3	**-4.3**	-1.3
RC13-205	-2.28	5.18	Forams	Winter	18.7	**21.9**	25.1	**23.5**	-4.8	**-1.6**	1.6
RC13-205	-2.28	5.18	Radiolaria	Winter	20.7	**23.5**	26.4	**23.5**	-2.8	**0.0**	2.9
V22-38	-9.51	-34.25	Forams	Winter	22.8	**25.1**	27.3	**25.8**	-3.0	**-0.7**	1.5
V22-38	-9.51	-34.25	Coccolithophore	Winter	22.0	**24.3**	26.5	**25.8**	-3.8	**-1.5**	0.7
V22-174	-10.07	-12.82	Forams	Winter	21.7	**23.9**	26.1	**23.9**	-2.2	**0.0**	2.2
V22-174	-10.07	-12.82	Coccolithophore	Winter	19.2	**22.6**	26.0	**23.9**	-4.7	**-1.3**	2.1
RC13-228	-22.33	11.2	Forams	Winter	16.0	**18.9**	21.8	**16.7**	-0.7	**2.2**	5.1
RC13-228	-22.33	11.2	Coccolithophore	Winter	13.4	**17.0**	20.6	**16.7**	-3.3	**0.3**	3.9
RC13-228	-22.33	11.2	Radiolaria	Winter	16.0	**18.9**	21.8	**16.7**	-0.7	**2.2**	5.1
RC13-229	-25.5	11.3	Forams	Winter	12.9	**15.6**	18.2	**16.6**	-3.7	**-1.0**	1.6
RC13-229	-25.5	11.3	Radiolaria	Winter	16.4	**18.8**	21.3	**16.6**	-0.2	**2.2**	4.7
RC11-86	-35.78	18.45	Forams	Winter	12.7	**15.1**	17.4	**15.8**	-3.1	**-0.7**	1.6
RC11-86	-35.78	18.45	Coccolithophore	Winter	15.4	**18.7**	22.0	**15.8**	-0.4	**2.9**	6.2
RC12-294	-37.27	-10.1	Forams	Winter	10.8	**14.2**	17.6	**13.8**	-3.0	**0.4**	3.8
RC12-294	-37.27	-10.1	Coccolithophore	Winter	12.0	**15.5**	19.0	**13.8**	-1.8	**1.7**	5.2

Annual* = When a * is indicated next to Annual, it means that Hoffman et al. 2017 took a site average between the summer and winter SST corrected for seasonal bias using HadISST data (see SOM of Hoffman et al. 2017 for details).
Forams = Please look at Table S1 from Hoffman et al. 2017 for details on the method (e.g. transfer function, % pachyderma, ….)

Table S2 Capron et al marine reconstruction of SST for 127 ka

Capron et al. QSR 2017
Critical evaluation of climate syntheses to benchmark CMIP6/PMIP4 127 ka Last Interglacial simulations in the high-latitude regions.

This dataset contains:
Columns A to L: The information of marine sediment and ice core sites included in the study: name, latitude, longitude, elevation, information of temperature reconstruction, WOA98 temperature value and the difference with pre-industrial HadISST and modern WOA98 data
Colmns M and N: Temperature anomaly and ±2 sigma (2s) errors for 127 ka using WOA98 values as modern reference (WoaAn)
Columns O and P: Temperature anomalies and ±2 sigma errors (2s) for 127 ka using Pre-Industrial surface temperature values (PIAn; Time interval 1870-1899)

Note that age pointers defined for building the common temperal framework between marine and ice core records are given in Table A2 available online as a supplement of the Capron et al. QSR 2014 paper.

Station	Latitude	Longitude	Elevation [m]	Area	Temperature reconstruction method	Uncertainty on temperature reconstruction [°C]	Type	References temperature data	Surface air temperature [°C]	SST from WOA98 [°C]	Diff HadISST minus WOA98 [°C]	127 ka Median WoaAn [°C]	127 ka WoaAn 2s [°C]	127 ka Median PIAn [°C]	127 ka 2s ±PIAn [°C]
HM71-19	69.49	-9.52	-2210	Norwegian Sea	Percentage of N. pachyderma sinistral	1.9	Summer SST	Fronval et al., 1998		5.6	0.0	1.5	3.9	1.6	3.9
PS1243	69.37	-6.55	-2711	Norwegian Sea	Percentage of N. pachyderma sinistral	1.9	Summer SST	Bauch et al., 2012		6.8	-0.6	1.1	3.6	1.6	4.2
HM57-7	68.43	-13.87	-1621	Norwegian Sea	Percentage of N. pachyderma sinistral	1.9	Summer SST	Fronval et al., 1998		5	0.4	2.0	3.6	1.6	3.3
ODP644	66.67	4.57	-1226	Norwegian Sea	Percentage of N. pachyderma sinistral	1.9	Summer SST	Fronval et al., 1998		10.9	-0.4	-4.6	3.5	-4.3	3.8
MD95-2009	62.74	-4	-1027	Norwegian Sea	Foraminifera transfer function (MAT)	2	Summer SST	Balbon, 2000; Manthé, 1998		10.3	0.1	-8.7	3.8	-8.7	3.7
ENAM33	61.27	-11.16	-1217	North Atlantic	Foraminifera transfer function (WAPLS)	1.8	Summer SST	Rasmussen et al., 2003; this study		11.1	0.4	-0.6	3.4	-0.9	3.0
EW9302-JPC8	61	-25	-1917	North Atlantic	Foraminifera transfer function (MAT)	1.5	Summer SST	Oppo et al., 1997		8.9	0.2	5.9	2.8	5.7	2.6
MD95-2014	60.58	-22.07	-2397	North Atlantic	Foraminifera transfer function (MAT)	1.5	Summer SST	Manthé, 1998		11.5	0.2	2.8	3.2	2.7	3.0
MD99-2227	58.21	-48.37	-3460	Labrador Sea	Mg/Ca	1.3	Summer SST	Winsor et al., 2012		7.3	0.3	-3.1	2.6	-3.4	2.3
MD03-2664_MAT	57.44	-48.61	-3442	Labrador Sea	Foraminifera transfer function (MAT)	1	Summer SST	Irvali et al., 2011		7.9	0.1	2.9	2.0	2.7	1.8
MD03-2664_MgCa	57.44	-48.61	-3442	Labrador Sea	Mg/Ca	1.7	Summer SST	Irvali et al., 2011		7.9	0.1	-1.0	3.3	-1.2	3.2
ODP 980	55.8	-14.11	-2180	North Atlantic	Foraminifera transfer function (MAT)	1.7	Summer SST	Oppo et al., 2006		13.7	0.1	1.0	3.4	1.0	3.4
NA87-25	55.57	-14.75	-2320	North Atlantic	Foraminifera transfer function (MAT)	1.3	Summer SST	Cortijo et al., 1999; Chapman & Shackleton, 1999		13.8	0.1	1.5	2.6	1.5	2.6
M23414-9	53.54	-20.28	-2196	North Atlantic	Foraminifera transfer function (MAT)	1.2	Summer SST	Bauch et al. 2012		14.3	0.2	1.7	2.4	1.6	2.2
NEAP18K	53	-30	-3275	North Atlantic	Foraminifera transfer function (MAT)	1.3	Summer SST	Cortijo et al. 1999; Chapman & Shackleton, 1999		12.9	0.3	1.8	2.8	1.6	2.5
SU90-39	52.57	-21.94	-3955	North Atlantic	Foraminifera transfer function (RAM)	0.9	Summer SST	LSCE database (unpublished)		14.5	0.2	0.3	1.8	0.1	1.6
SU90-44	50.02	-17.1	-4255	North Atlantic	Foraminifera transfer function (RAM)	0.8	Summer SST	LSCE database (unpublished)		16	0.2	3.2	1.5	2.9	1.3
K708-1	50	-23.73	-4053	North Atlantic	Foraminifera transfer function (F13B-4CE)	1.4	Summer SST	Ruddiman & McIntyre 1984		15.6	0.3	2.0	2.8	1.8	2.5
EW9302-JPC2	48.8	-45.09	-1251	Labrador Sea	Percentage of N. pachyderma sinistral	1.9	Summer SST	Rasmussen et al., 2003		12.1	-1.0	-4.0	3.9	-3.0	4.8
SU90-08_Alk	43.35	-30.41	-3080	North Atlantic	Alkenone ratio	1.5	Annual SST	Villanueva et al., 1998		16.5	0.2	3.4	2.9	3.2	2.7
SU90-08_MAT	43.35	-30.41	-3080	North Atlantic	Foraminifera transfer function (MAT)	1.8	Summer SST	Cortijo, 1995		19.9	0.4	2.1	3.5	1.6	3.1
CH69-K09	41.76	-47.35	-4100	North Atlantic	Foraminifera transfer function (MAT)	2.1	Summer SST	Labeyrie et al., 1999; Cortijo et al., 1999		19.8	0.3	-2.5	4.3	-2.8	4.0
V30-97	41	-32.93	-3371	North Atlantic	Foraminifera transfer function (F13B-4CE)	1.4	Summer SST	Ruddiman & McIntyre, 1981		21.7	0.3	-0.2	2.9	-0.5	2.6
SU90-03	40.51	-32.05	-2475	North Atlantic	Foraminifera transfer function (MAT)	1	Summer SST	Chapman & Shackleton, 1998; Cortijo et al., 1999		21.8	0.3	0.8	2.0	0.4	1.6
MD97-2121_A	-40.22	177.59	-3014	Southern Ocean	Alkenone ratio	0.6	Summer SST	Pahnke et al., 2006		19.2	-1.5	2.0	1.2	3.4	2.6
MD97-2121_B	-40.22	177.59	-3014	Southern Ocean	Alkenone ratio	1	Annual SST	Pahnke et al., 2006		16.6	-1.6	3.5	2.0	5.1	3.6
ODO1089	-40.94	9.9	-4620	Southern Ocean	Radiolarian transfer function	1.2	Summer SST	Cortese et al., 2007		13.2	-0.5	4.4	2.5	4.8	3.0
MD94-101	-42.50	79.42	-2920	Southern Ocean	Foraminifera transfer function (MAT)	2.1	Summer SST	Lemoine, 1998; Salvignac, 1998		13	-0.4	-0.5	3.9	-0.2	4.3
PS2489-2	-42.52	8.58	-3794	Southern Ocean	Foraminifera transfer function (MAT)	1.5	Summer SST	Becquey and Gersonde, 2002		10.7	0.0	-0.1	2.9	-0.1	2.9
PS2082	-43.22	11.74	-4611	Southern Ocean	Radiolarian transfer function	1.6	Summer SST	Brathauer et al., 1996		11.1	-0.6	0.2	3.3	0.8	3.9
MD94-102	-43.50	79.83	-3205	Southern Ocean	Foraminifera transfer function (MAT)	2.1	Summer SST	Lemoine, 1998; Salvignac, 1998		11.5	0.1	1.0	4.3	0.9	4.2
DSDP-594	-45.31	174.57	-1204	Southern Ocean	Foraminifera transfer function (MAT)	0.9	Annual SST	Wells and Okada, 1997		11	-0.2	2.8	2.2	3.0	2.4
MD97-2120	-45.53	174.93	-1210	Southern Ocean	Foraminiferal Mg/Ca ratio	0.8	Summer SST	Pahnke et al., 2003		13.5	0.0	1.1	1.7	1.1	1.7
MD88-770	-46.02	96.45	-3290	Southern Ocean	Foraminifera transfer function (MAT)	1.4	Summer SST	Labeyrie et al., 1999; Govin et al., 2009		8.6	-0.2	1.5	2.7	1.7	2.9
MD88-769	-46.07	90.10	-3420	Southern Ocean	Foraminifera transfer function (MAT)	1.9	Summer SST	Lemoine, 1998; Salvignac, 1998		9.1	-0.3	4.0	3.7	4.2	3.9
MD02-2488	-46.49	88.02	-3420	Southern Ocean	Foraminifera transfer function (MAT)	1.9	Summer SST	Govin et al., 2009; Govin et al., 2012		8.9	-0.2	3.9	3.7	4.0	3.9
PS2102-2	-53.07	-4.98	-2390	Southern Ocean	Diatom transfer function	0.7	Summer SST	Bianchi and Gersonde, 2002		1.8	0.6	1.5	1.4	0.9	0.8
ODP1094	-53.18	5.13	-2807	Southern Ocean	Diatom transfer function	0.7	Summer SST	Bianchi and Gersonde, 2002		2.2	0.1	1.1	1.4	1.1	1.4
PS2276-4	-54.38	-23.57	-4383	Southern Ocean	Diatom transfer function	0.7	Summer SST	Bianchi and Gersonde, 2002		1.7	0.6	0.9	1.5	0.3	0.9
MD84-551	-55	73	-2230	Southern Ocean	Foraminifera transfer function (MAT)	1	Summer SST	Pichon et al., 1992		2.5	-0.2	3.2	2.1	3.4	2.3
SO136-111	-56.4	160.14	-3914	Southern Ocean	Diatom transfer function	1.8	Summer SST	Crosta et al., 2004		5.5	-0.1	-0.3	3.7	-0.1	3.8

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Table S3 Ice cores surface temperatures for 127 ka

Station	Latitude	Longitude	Elevation [m]	Area	Temperature reconstruction method	Uncertainty on temperature reconstruction [°C]	Type	References temperature data	Surface air temperature [°C]	SST from WOA98 [°C]	Diff HadISST minus WOA98 [°C]	127 ka Median WoaAn [°C]	127 ka WoaAn 2s [°C]	127 ka Median PIAn [°C]	127 ka 2s PIAn [°C]
NEEM	77.49	-51.2	2545	Greenland	Water isotopes	4	Precipitation-weighted surface temperature	NEEM c. m., 2013	-29		0.0	7.3	7.8	7.3	7.8
EDML	-75	0	2892	Antarctica	Water isotopes	1.5	Annual air temperature	Masson-Delmotte et al., 2011	-44.6		0.0	0.9	2.9	0.9	2.9
EDC	-75.1	123.35	3233	Antarctica	Water isotopes	1.5	Annual air temperature	Masson-Delmotte et al., 2011	-54.5		0.0	2.9	3.0	2.9	3.0
Dome F	-77.3	39.7	3810	Antarctica	Water isotopes	1.5	Annual air temperature	Masson-Delmotte et al., 2011	-57		0.0	3.3	3.1	3.3	3.1
Vostok	-78.5	106.87	3488	Antarctica	Water isotopes	1.5	Annual air temperature	Masson-Delmotte et al., 2011	-55.3		0.0	1.9	2.9	1.9	2.9

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Table S4 Europe: Terrestrial surface temperature reconstruction for 127 ka

Europe: Reconstructed temperatures for 127 ka (Brewer et al., (2008)

				Annual Mean						
site name	**longitude**	**latitude**	**Proxy**	**Reconstructed Annual Mean Temperature [°C] 127 ka**	**Uncertainty of temperature reconstruction [°C]**	**PI Annual Mean Temperature [°C] ***	**Anomaly wrt. PI [°C]**	**PI to Modern offset HadCRUT4 ****	**Modern Annual Mean Temperature [°C] *****	**Anomaly wrt. Modern [°C]**
La Grande Pile	6.5	47.73	pollen	11.9207	1.54	8.77	3.16	1.00	9.77	2.15
Ioannina 249	20.92	39.65	pollen	9.01928	1.78	13.82	-4.80	0.00	13.82	-4.80
Imbramowice	16.58	50.89	pollen	10.6934	1.15	7.36	3.33	0.53	7.89	2.80
Beerenmösli	7.51	47.06	pollen	11.0475	1.32	7.00	4.05	1.00	8.00	3.05
Eurach	11.31	47.78	pollen	6.34872	1.69	6.10	0.24	0.90	7.00	-0.65
Jammertal	9.53	48.06	pollen	11.1832	2.19	7.05	4.14	1.00	8.05	3.13
Lathuile	6.14	45.75	pollen	6.24336	1.66	8.50	-2.25	1.00	9.50	-3.26
Samerberg	12.2	47.75	pollen	5.19792	2.21	6.10	-0.91	0.90	7.00	-1.80
Eiffel Maar	6.59	50.19	pollen	0.700853	2.63	6.42	-5.72	0.58	7.00	-6.30
Hoher List (Eiffel)	6.84	50.17	pollen	0.102877	1.93	7.58	-7.47	0.58	8.16	-8.06
Les Echets	5	45.83	pollen	10.576	1.14	10.50	0.08	0.72	11.22	-0.64
Lago Grande di Monticchio	15.6	40.94	pollen	12.5627	1.15	9.56	3.00	0.44	10.00	2.56

				Mean temp Warmest Month						
site name	**longitude**	**latitude**	**Proxy**	**Reconstructed Mean Temperature of Warmest Month [°C] 127 ka**	**Uncertainty of temperature reconstruction [°C]**	**PI Mean Temperature of Warmest Month[°C] ***	**Anomaly wrt. PI [°C]**	**PI to Modern offset HadCRUT4 ****	**Modern Mean Temperature of Warmest Month [°C]*****	**Anomaly wrt. Modern [°C]**
La Grande Pile	6.5	47.73	pollen	21.2328	1.52	17.92	3.31	0.85	18.77	2.46
Ioannina 249	20.92	39.65	pollen	20.9976	2.39	23.80	-2.80	-0.51	23.29	-2.29
Imbramowice	16.58	50.89	pollen	20.1699	1.29	17.73	2.44	0.53	18.26	1.91
Beerenmösli	7.51	47.06	pollen	20.068	1.53	16.51	3.56	0.85	17.36	2.71
Eurach	11.31	47.78	pollen	17.6367	2.05	16.63	1.01	0.87	17.50	0.14
Jammertal	9.53	48.06	pollen	20.1572	1.84	17.15	3.01	0.85	18.00	2.16
Lathuile	6.14	45.75	pollen	15.8446	1.78	17.65	-1.81	0.85	18.50	-2.66
Samerberg	12.2	47.75	pollen	16.7928	1.51	16.40	0.39	0.87	17.27	-0.48
Eiffel Maar	6.59	50.19	pollen	15.2746	1.19	16.86	-1.58	0.39	17.25	-1.98
Hoher List (Eiffel)	6.84	50.17	pollen	14.9018	1.14	16.96	-2.05	0.39	17.35	-2.45
Les Echets	5	45.83	pollen	19.5498	1.28	19.71	-0.16	0.30	20.01	-0.46
Lago Grande di Monticchio	15.6	40.94	pollen	21.5172	1.19	18.76	2.75	0.24	19.00	2.52

				Mean temp Coldest Month						
site name	**longitude**	**latitude**	**Proxy**	**Reconstructed Mean Temperature of Coldest Month [°C] 127 ka**	**Uncertainty of temperature reconstruction [°C]**	**PI Mean Temperature of Coldest Month [°C]***	**Anomaly wrt. PI [°C]**	**PI to Modern offset HadCRUT4 ****	**Modern Mean Temperature of Coldest Month [°C]*****	**Anomaly wrt. Modern [°C]**
La Grande Pile	6.5	47.73	pollen	2.51	3.67	-0.08	2.59	1.19	1.11	1.40
Ioannina 249	20.92	39.65	pollen	-2.35	4.54	3.86	-6.21	0.20	4.06	-6.41
Imbramowice	16.58	50.89	pollen	1.48	2.32	-2.71	4.19	0.51	-2.20	3.68
Beerenmösli	7.51	47.06	pollen	1.45	3.11	-3.19	4.63	1.19	-2.00	3.45
Eurach	11.31	47.78	pollen	-4.62	4.40	-2.58	-2.04	0.93	-1.65	-2.97
Jammertal	9.53	48.06	pollen	2.01	3.83	-3.19	5.20	1.19	-2.00	4.01
Lathuile	6.14	45.75	pollen	-3.25	4.82	-1.19	-2.06	1.19	0.00	-3.25
Samerberg	12.2	47.75	pollen	-7.48	5.11	-3.05	-4.43	0.93	-2.12	-5.36
Eiffel Maar	6.59	50.19	pollen	-13.19	5.41	-2.61	-10.58	0.61	-2.00	-11.19
Hoher List (Eiffel)	6.84	50.17	pollen	-13.48	6.33	-2.61	-10.87	0.61	-2.00	-11.48
Les Echets	5	45.83	pollen	1.48	2.23	1.50	-0.02	1.32	2.82	-1.34
Lago Grande di Monticchio	15.6	40.94	pollen	3.73	3.09	-0.48	4.22	0.54	0.06	3.67

* Preindustrial (PI) refers to 1871-1900.
** The observed warming until 1971-2000 was computed from a spatially-complete gridded temperature anomaly dataset of Cowtan and Way (2014) for the relevant location and months.
*** Modern (1971-2000) from Brewer et al. (2008) (CRU TS (v3: published in 2006)

Table S5 Arctic: Terrestrial surface temperature reconstruction for 127 ka

Arctic LIG air temperature reconstructions (PEAK LIG warmth registered at terrestrial sites above 65 N latitude)

Inclusion criteria: location above 65 N latitude; calibrated air temp estimates published in peer-reviewed literature; includes the most stratigraphically complete and well-dated sites from each region; avoids isolated LIG time slices. Note temps used for anomalies are "peak" temps of the LIG reconstructions at each site (avg of two warmest consecutive samples).

Site Name	Location	Latitude	Longitude	Elevation (m)	Proxy	Modern July air T	Reconstructed Ju	± Uncertainty of r	Reference
Fog Lake	Canada	67°11′N	63°15′W	460	pollen & chironc	4.5	9.9	1.5	Fréchette, B. et al. (2006) ; Francis, D.R. et al. (2006)
Amarok Lake	Canada	66°16′N	65°45′W	848	pollen	5.5	9.9	0.8	Fréchette, B. et al. (2006)
Lake CF8	Canada	70°34′N	68°57′W	195	chironomids	4.4	10.0	1.5	Axford, Y. et al. (2011)
Wax Lips Lake	Greenland	76°51′N	66°58′W	500	chironomids	6.2	13.4	1.5	McFarlin, J.M. et al. (2018)
El'gygytgyn	Siberia	67°30′N	172°05′E	500	pollen	8.8	9.8	4.1	Melles, M. et al. (2012)
Sokli	Finland	67°48′N	29°18′E	220	pollen & chironc	13.0	15.1	2.1	Salonen, J.S. et al. (2018); Plikk, A. et al. (2019)
Birch Creek*	Alaska	65°49′N	144°18′W	250	beetles	16.8	14.8	1.0	Bigelow et al. (2014)
Koyukuk*	Alaska	66°33′N	152°05′W	300	beetles	15.7	16.5	2.8	Bigelow et al. (2014)

* Elevation estimated, ±100m

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