

Figure S1: Comparison between the atmospheric CH<sub>4</sub> concentration (Louergue et al., 2008; Nehrbass-Ahles et al., 2020) and synthetic curve of Greenland temperatures GL<sub>T\_syn</sub> (Barker et al., 2011). The two records are displayed on the AICC2023 chronology (Bouchet et al., 2023)

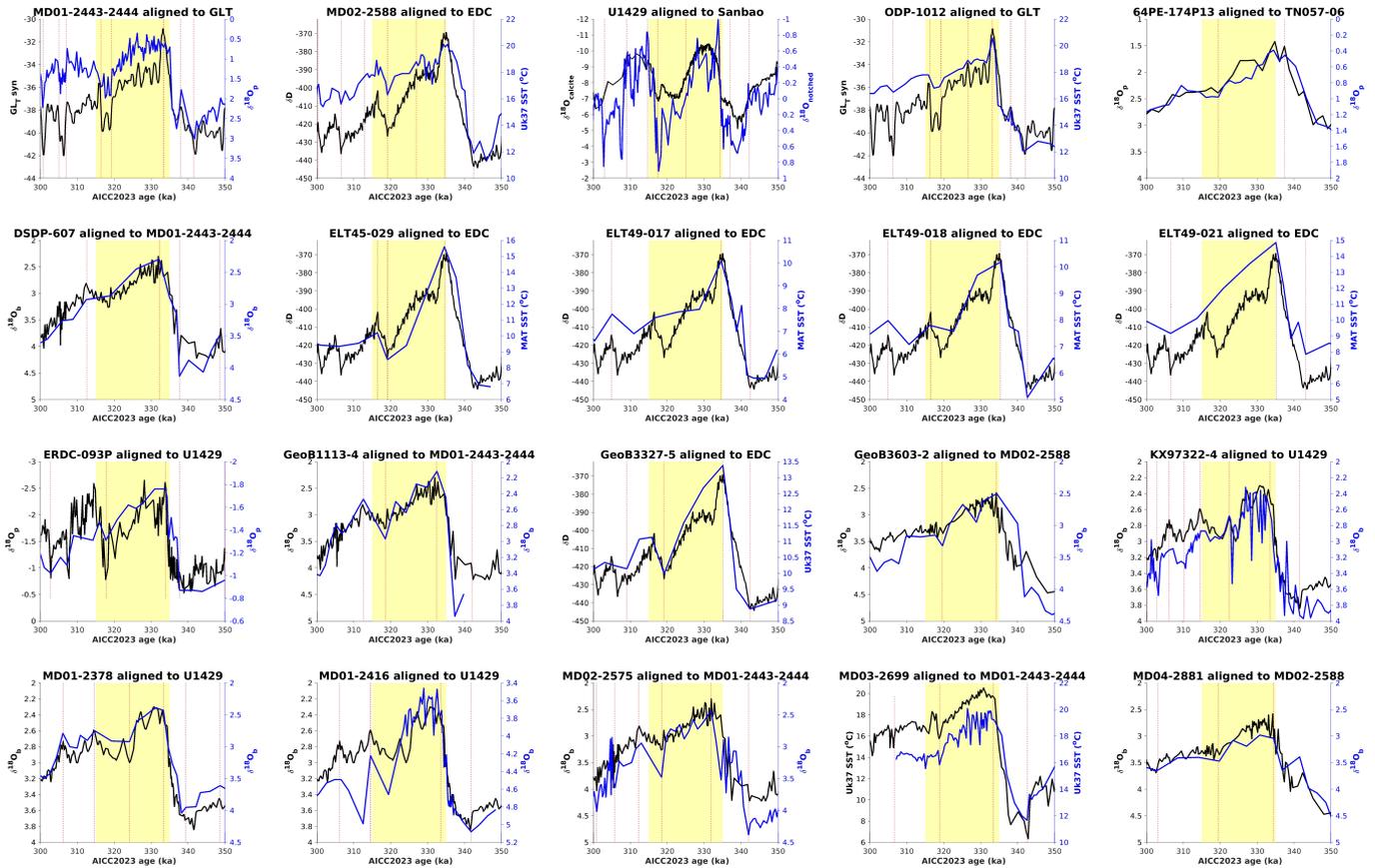


Figure S2: Alignments of the SST sites used in this study. For each plot, the blue line represents the record used to align to the reference (black line). The dotted vertical lines are the tie-points as defined in the *AnalySeries* software (Paillard et al., 1996). The light yellow area in each plot envelops the MIS 9e.

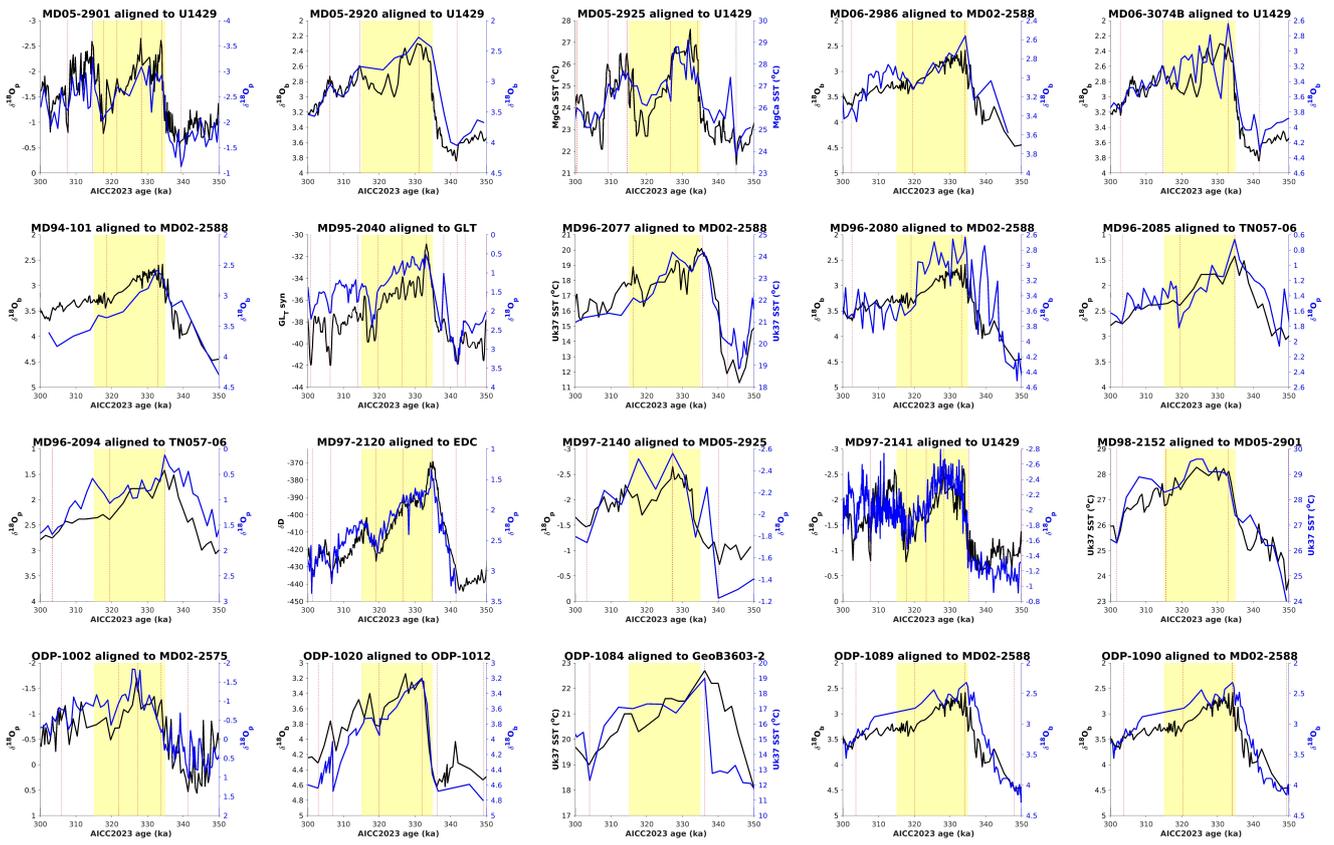


Figure S2 (suite)

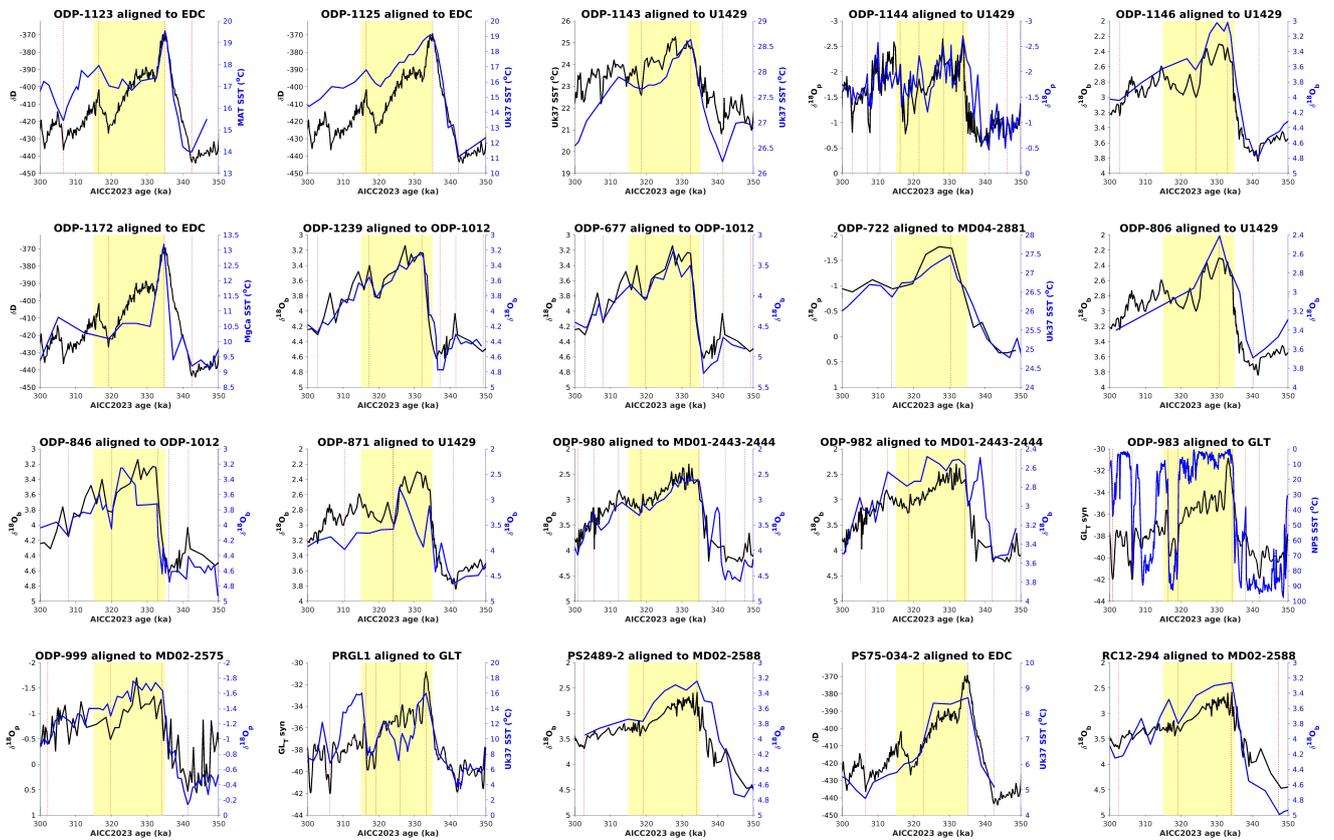


Figure S2 (suite)

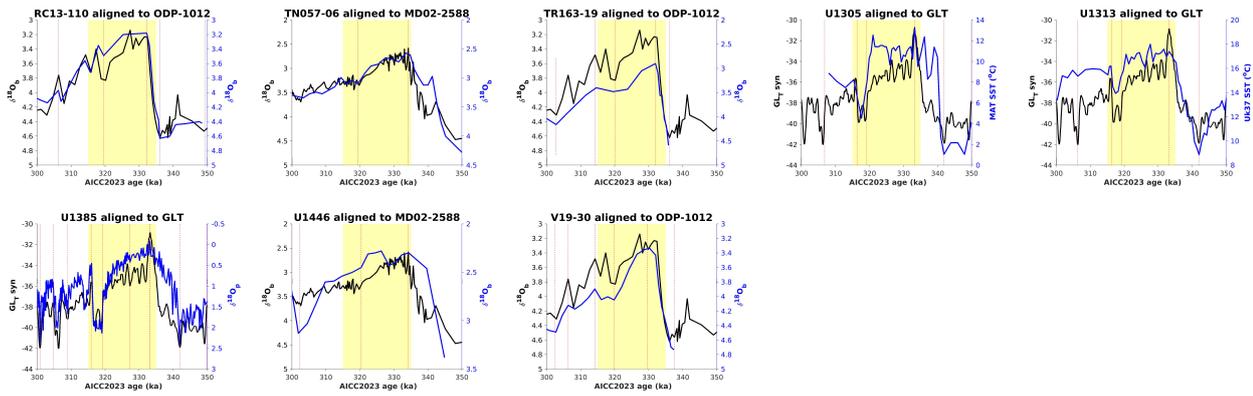


Figure S2 (suite)

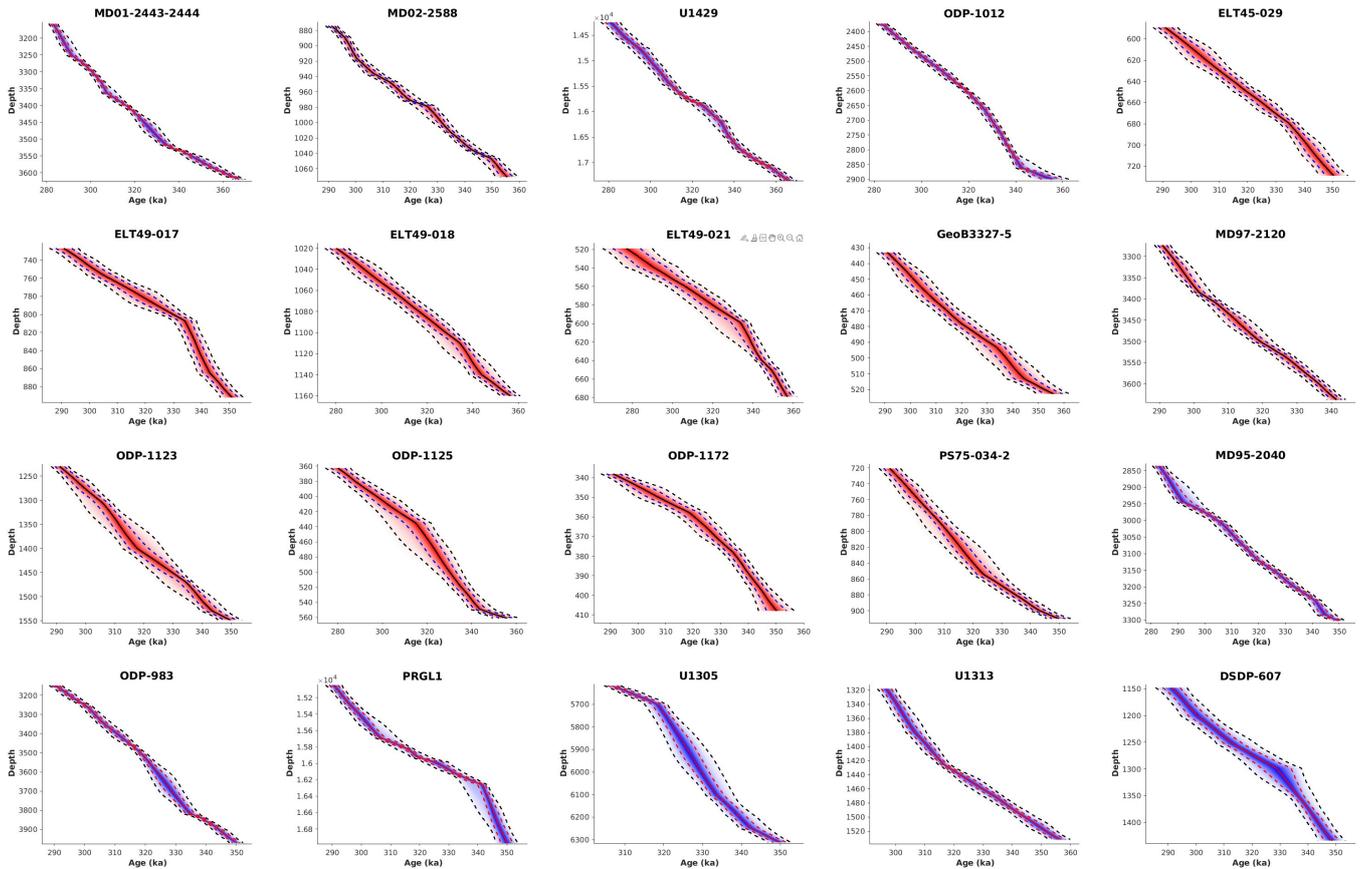


Figure S3: Results of the final Bayesian age-depth models using the “Undatable” GUI software (Lougheed and Obrochta, 2019). The middle line represents the median age. The dotted lines represent the  $\sigma$  and  $2\sigma$  uncertainties. The color is defined under latitudinal criteria: The northern sites (latitude  $> 23.5$ ) are plotted in blue, the tropical sites (latitude between  $23.5$  and  $-23.5$ ) are plotted in green and the southern sites (latitude  $< -23.5$ ) are plotted in red.

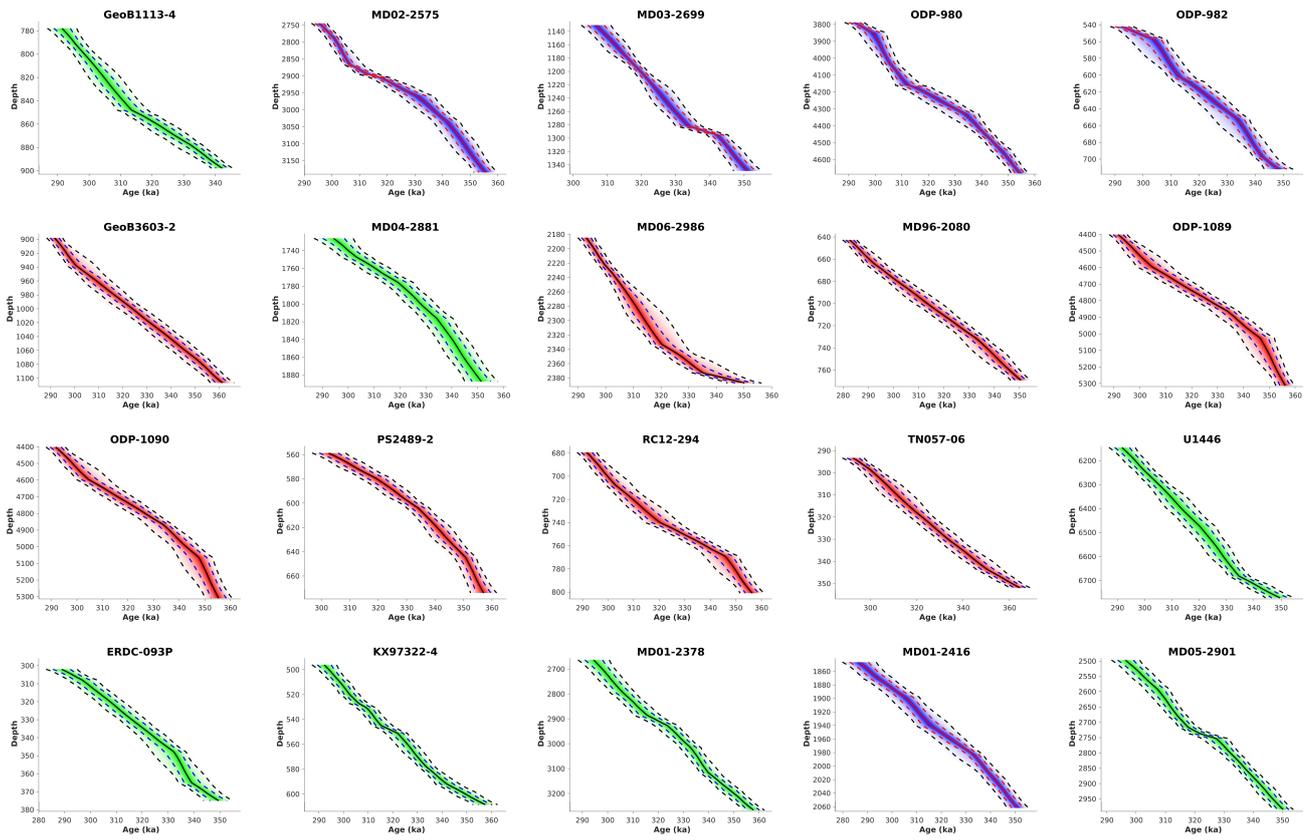


Figure S3 (suite)

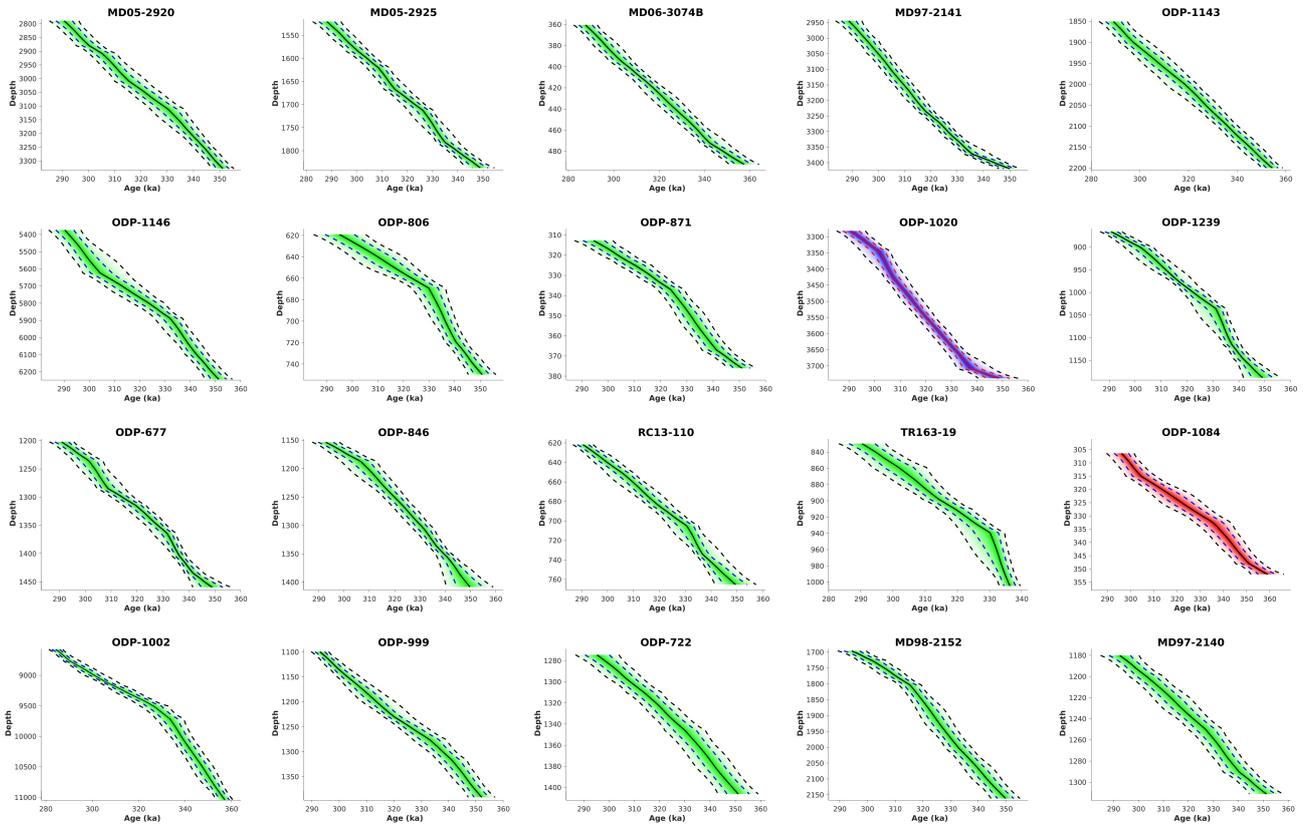


Figure S3 (suite)

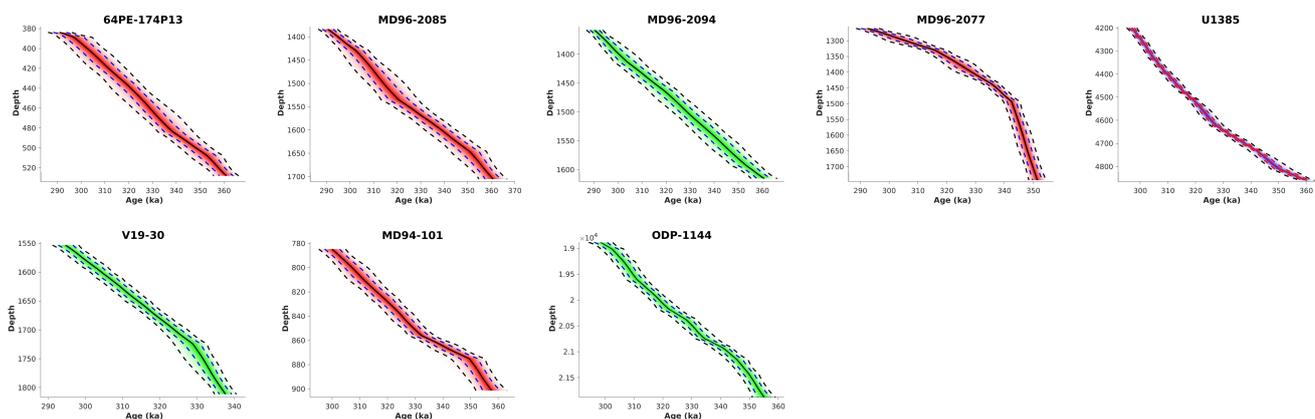


Figure S3 (suite)

Table S1 : Locations, available proxies used in this study, SST type and original references of the sites used in this study. The lines with bold text indicate the four “basin references”.

Core_name	Latitude	Longitude	Elevation	Proxy	SST type	Published resolution (ka)	Reference
64PE-174P13	-29,76	2,40	-2912	$\delta^{18}\text{O}$	Seasonnal	1,87	[1]
DSDP-607	41,00	-32,96	-3427	MAT	Seasonnal	2,82	[2]
ELT45-029	-44,88	106,52	-3867	MAT	Seasonnal	3,50	[3]
ELT49-017	-48,28	90,25	-3546	MAT	Seasonnal	3,85	[3]
ELT49-018	-46,05	90,16	-3282	MAT	Seasonnal	2,31	[3]
ELT49-021	-42,19	94,89	-3319	MAT	Seasonnal	3,97	[3]
ERDC-093P	-2,24	157,01	-1604	$\delta^{18}\text{O}$	Annual	2,24	[4]
GeoB1113-4	-5,75	-11,04	-2374	$\delta^{18}\text{O}$	Annual	2,15	[5]
GeoB3327-5	-43,24	-79,99	-3531	$\text{U}^{\text{K}}_{37}$	Annual	3,66	[6]
GeoB3603-2	-35,13	17,54	-2840	$\text{U}^{\text{K}}_{37}$	Annual	1,55	[7]
KX97322-4	-0,03	159,25	-2362	$\delta^{18}\text{O}$ , Mg/Ca	Annual	0,52; 0,52	[8]
MD01-2378	-13,08	121,79	-1783	$\delta^{18}\text{O}$	Annual	2,32	[9]
MD01-2416	51,27	167,73	-2317	$\delta^{18}\text{O}$	Annual		[10]
<b>MD01-2443-2444*</b>	<b>37,69</b>	<b>-10,15</b>	<b>-2790</b>	<b><math>\text{U}^{\text{K}}_{37}</math>, <math>\delta^{18}\text{O}</math></b>	<b>Annual</b>	<b>0,39; 0,38</b>	<b>[11], [12]</b>
MD02-2575	29,00	-87,12	-847	Mg/Ca, $\delta^{18}\text{O}$	Annual	0,77; 0,77	[13]
<b>MD02-2588*</b>	<b>-41,20</b>	<b>25,50</b>	<b>-2907</b>	<b><math>\text{U}^{\text{K}}_{37}</math></b>	<b>Annual</b>	<b>0,47</b>	<b>[14]</b>
MD03-2699	39,04	-10,66	-1865	$\text{U}^{\text{K}}_{37}$ , $\delta^{18}\text{O}$	Annual	0,65; 0,53	[15], [16]
MD04-2881	22,20	63,08	-2387	$\delta^{18}\text{O}$	Annual	2,73	[17]
MD05-2901	14,38	110,74	-1454	$\text{U}^{\text{K}}_{37}$ , $\delta^{18}\text{O}$	Annual	0,96; 0,96	[18]
MD05-2920	-2,86	144,53	-1849	Mg/Ca	Annual	0,83	[19]
MD05-2925	-9,34	151,46	-1661	Mg/Ca, $\delta^{18}\text{O}$	Annual	1,09; 1,17	[20]
MD06-2986	-43,45	167,90	-1477	Mg/Ca	Annual	1,14	[21]
MD06-3074B	17,01	124,81	-2510	Mg/Ca, $\delta^{18}\text{O}$	Annual	2,77; 2,67	[22]
MD94-101	-42,50	79,42	-2920	MAT	Seasonnal	1,92	<i>unpublished*</i>
MD95-2040	40,58	-9,86	-2465	$\delta^{18}\text{O}$	Annual	0,47	[23]
MD96-2077	-33,28	31,42	-3781	$\text{U}^{\text{K}}_{37}$	Annual	2,33	[24]
MD96-2080	-36,27	19,48	-2488	Mg/Ca, $\delta^{18}\text{O}$	Annual	1,24; 0,52	[25]
MD96-2085	-29,70	12,94	-3001	$\delta^{18}\text{O}$	Annual	1,13	[26]
MD96-2094	-20,00	9,27	-2280	$\delta^{18}\text{O}$	Annual		[27]
MD97-2120	-45,53	174,93	-1210	Mg/Ca, $\delta^{18}\text{O}$	Annual	1,44; 0,36	[28]

MD97-2140	2,03	141,77	-2547 Mg/Ca, $\delta^{18}\text{O}$	Annual	3,89; 3,75	[29]
MD97-2141	8,78	121,28	-3633 $\delta^{18}\text{O}$	Annual	0,17	[30]
MD98-2152	-6,33	103,88	-1796 $\text{U}^{\text{K}}_{37}$	Annual	2,64	[31]
ODP-1002	10,71	-65,17	-893 $\delta^{18}\text{O}$	Annual	0,97	[32]
<b>ODP-1012*</b>	<b>32,28</b>	<b>-118,38</b>	<b>-1783 <math>\text{U}^{\text{K}}_{37}</math></b>	<b>Annual</b>	<b>1,26</b>	<b>[33]</b>
ODP-1020	41,00	-126,43	-3042 $\text{U}^{\text{K}}_{37}$	Annual	2,38	[33]
ODP-1084	-25,51	13,03	-1992 $\text{U}^{\text{K}}_{37}$	Annual,	2,19	[34]
ODP-1089	-40,94	9,89	-4621 $\delta^{18}\text{O}$ , MAT	seasonnal	0,48; 3,29	[35], [36]
ODP-1090	-42,91	8,90	-3702 $\text{U}^{\text{K}}_{37}$	Annual	2,99	[37]
ODP-1123	-41,79	-171,50	-3290 MAT	Annual	1,89	[38]
ODP-1125	-42,55	-178,17	-1365 $\text{U}^{\text{K}}_{37}$	Annual	3,65	[39]
ODP-1143	9,36	113,29	-2772 $\text{U}^{\text{K}}_{37}$	Annual	1,32	[40]
ODP-1144	20,05	117,42	-2037 d18O	Annual	0,63	[64]
ODP-1146	19,46	116,27	-2092 $\text{U}^{\text{K}}_{37}$ , $\delta^{18}\text{O}$	Annual	1,65; 1,63	[41], [42]
ODP-1172	-43,96	149,93	-2622 Mg/Ca, $\delta^{18}\text{O}$	Annual	2,45; 2,45	[43]
ODP-1239	-0,67	-82,08	-1414 $\text{U}^{\text{K}}_{37}$	Annual	1,16	[44]
ODP-677	1,20	-83,73	-3450 $\delta^{18}\text{O}$	Annual	2,5	[45]
ODP-722	16,62	59,80	-2034 $\text{U}^{\text{K}}_{37}$	Annual	1,06	[41]
ODP-806	0,32	159,36	-2520 Mg/Ca, $\delta^{18}\text{O}$	Annual	3,82; 3,82	[46]
ODP-846	-3,10	-90,82	-3296 $\text{U}^{\text{K}}_{37}$	Annual	2,19	[41]
ODP-871	5,55	172,35	-1255 Mg/Ca	Annual	2,85	[47]
ODP-980	55,48	-14,70	-2180 $\delta^{18}\text{O}$	Annual,	0,83	[48]
ODP-982	57,50	-15,87	-1135 $\delta^{18}\text{O}$ , $\text{U}^{\text{K}}_{37}$	seasonnal	2,31; 1,56	[49], [50]
ODP-983	60,40	-23,64	-1984 MAT	Annual	0,78	[51]
ODP-999	12,75	-78,73	-2827 Mg/Ca, $\delta^{18}\text{O}$	Annual,	1,35; 1,27	[52]
PRGL1	42,69	3,84	-299 $\delta^{18}\text{O}$ , $\text{U}^{\text{K}}_{37}$	seasonnal	0,61; 0,46	[53], [54]
PS2489-2	-42,87	8,97	-3794 MAT	Seasonnal	1,09; 1,17	[55]
PS75-034-2	-54,37	-80,09	-4436 $\text{U}^{\text{K}}_{37}$	Annual	3,38	[6]
RC12-294	-37,27	-10,10	-3308 MAT	Seasonnal	2	[56]
RC13-110	-0,10	-95,65	-3231 MAT	Annual	3,55	[57]
TN057-06	-42,90	8,90	-3751 $\delta^{18}\text{O}$	Annual		[58]
TR163-19	2,26	-90,95	-2348 Mg/Ca, $\delta^{18}\text{O}$	Annual	1,65; 1,57	[59]
U1305	57,48	-48,53	-3460 Mg/Ca, MAT	Seasonnal	1,87; 0,91	[60]
U1313	41,00	-32,96	-3426 $\text{U}^{\text{K}}_{37}$	Annual	0,56	[61]
U1385	37,57	-10,13	-2587 d18O	Annual	0,18	[65]
<b>U1429*</b>	<b>31,62</b>	<b>129,00</b>	<b>-732 <math>\text{Mg/Ca}</math>, <math>\delta^{18}\text{O}</math></b>	<b>Annual</b>	<b>0,3; 0,3; 0,3</b>	<b>[62]</b>
U1446	19,08	85,74	-1430 Mg/Ca, $\delta^{18}\text{O}$	Annual	3,16; 2,13	[63]
V19-30	-3,38	-83,52	-3091 d18O	Annual	0,33	[66]

[1] Scussolini & Peeters (2013); [2] Ruddiman et al. (1989); [3] Howard & Prell (1992); [4] Shackleton (1992); [5] Sarnthein et al. (1994); [6] Ho et al. (2012); [7] Peeters et al. (2004); [8] Zhang et al. (2021); [9] Holbourn et al. (2005); [10] Gebhardt et al. 2008; [11] Martrat et al. (2007); [12] Hodell et al. (2013); [13] Nürnberg et al. (2008); [14] Romero et al. (2015); [15] Rodrigues et al. (2011); [16] Voelker et al. (2010); [17] Ziegler et al. (2010); [18] Li et al. (2009); [19] Tachikawa et al. (2014); [20] Lo et al. (2017); [21] Mashiotta et al. (1999); [22] Jia et al. (2018); [23] Voelker & Abreu (2011); [24] Bard & Rickaby (2009); [25] Martínez-Méndez et al. (2010); [26] Chen et al. (2002); [27] Stuut et al. (2002); [28] Pahnke et al. (2003); [29] Garidel-Thoron et al. (2005); [30] Oppo et al. (2003); [31] Windler et al. (2019); [32] Gibson & Peterson (2014); [33] Hebert et al. (2001); [34] Rosell-Melé et al. (2014); [35] Hodell et al. (2003); [36] Cortese et al. (2004); [37] Martínez-García et al. (2009); [38] Hayward et al. (2008); [39] Peterson et al. (2020); [40] Li et al. (2011); [41] Herbert et al. (2010); [42] Clemens et al. (2008); [43] Nürnberg & Groeneveld (2006); [44] Dyez et al. (2016); [45] Shackleton et al. (2011); [46] Medina-Elizalde & Lea (2005); [47] Dyez & Ravelo (2014); [48] McManus et al. (1999); [49] Venz et al. (2005); [50] Herbert et al. (2016); [51] Barker et al. (2021); [52] Schmidt et al. (2006); [53] Frigola et al. (2012); [54] Cortina et al. (2015); [55] Becquey & Gersonde (2003); [56] Imbrie et al. (1989); [57] Pisias & Mix (2010); [58] Hodell et al. (2000); [59] D.W. Lea (2004); [60] Irali et al. (2019); [61] Naafs et al. 2012; [62] Clemens et al. (2018); [63] Clemens et al. (2021); [64] Bühring et al. (2004); [65] Hodell et al. (2023); [66] Lyle et al. (2002). The unpublished data from core MD94-101 comes from Lemoine (1998).

## References

- Bard, E. and Rickaby, R. E. M.: Migration of the subtropical front as a modulator of glacial climate, *Nature*, 460, 380–383, <https://doi.org/10.1038/nature08189>, 2009.
- Barker, Stephen (2021): Faunal counts of planktonic foraminifera and sea surface temperatures from ODP Site 983 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.929742>.
- Barker, S., Knorr, G., Edwards, R. L., Parrenin, F., Putnam, A. E., Skinner, L. C., Wolff, E., and Ziegler, M.: 800,000 Years of Abrupt Climate Variability, *Science*, 334, 347–351, <https://doi.org/10.1126/science.1203580>, 2011.
- Becquey, Sabine; Gersonde, Rainer (2003): Stable isotope analysis of benthic foraminifera and summer sea surface temperature reconstruction of sediment core PS2489-2 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.615929>, In supplement to: Becquey, S; Gersonde, R (2003): A 0.55-Ma paleotemperature record from the Subantarctic zone: Implications for Antarctic Circumpolar Current development. *Paleoceanography*, 18(1), 1014, <https://doi.org/10.1029/2000PA000576>.
- Bouchet, M., Landais, A., Grisart, A., Parrenin, F., Prié, F., Jacob, R., Fourné, E., Capron, E., Raynaud, D., Lipenkov, V. Y., Loutre, M.-F., Extier, T., Svensson, A., Legrain, E., Martinerie, P., Leuenberger, M., Jiang, W., Ritterbusch, F., Lu, Z.-T., and Yang, G.-M.: The Antarctic Ice Core Chronology 2023 (AICC2023) chronological framework and associated timescale for the European Project for Ice Coring in Antarctica (EPICA) Dome C ice core, *Clim. Past*, 19, 2257–2286, <https://doi.org/10.5194/cp-19-2257-2023>, 2023.
- Bühring, Christian; Sarnthein, Michael; Erlenkeuser, Helmut (2004): High-resolution isotope stratigraphy of ODP Site 184-1144 [dataset publication series]. PANGAEA, <https://doi.org/10.1594/PANGAEA.736633>.
- Chen, Min-Te; Chang, Yuan-Pin; Chang, Cheng-Chieh; Wang, Liping; Wang, Chung-Ho; Yu, Ein-Fen (2002): Stable carbon and oxygen isotope ratios of *Globorotalia inflata* of sediment core MD96-2085 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.66335>, In supplement to: Chen, Min-Te; Chang, Yuan-Pin; Chang, Cheng-Chieh; Wang, Li-Wen; Wang, Chung-Ho; Yu, Ein-Fen (2002): Late Quaternary sea-surface temperature variations in the southeast Atlantic: a planktic foraminifer faunal record of the past 600 000 yr (IMAGES II MD962085). *Marine Geology*, 180(1-4), 163-181, [https://doi.org/10.1016/S0025-3227\(01\)00212-2](https://doi.org/10.1016/S0025-3227(01)00212-2).
- Clemens, S. C., Prell, W. L., Sun, Y., Liu, Z., and Chen, G.: Southern Hemisphere forcing of Pliocene  $\delta^{18}\text{O}$  and the evolution of Indo-Asian monsoons, *Paleoceanography*, 23, 2008PA001638, <https://doi.org/10.1029/2008PA001638>, 2008.
- Clemens, S. C., Holbourn, A., Kubota, Y., Lee, K. E., Liu, Z., Chen, G., Nelson, A., and Fox-Kemper, B.: Precession-band variance missing from East Asian monsoon runoff, *Nat Commun*, 9, 3364, <https://doi.org/10.1038/s41467-018-05814-0>, 2018.
- Clemens, S. C., Yamamoto, M., Thirumalai, K., Giosan, L., Richey, J. N., Nilsson-Kerr, K., Rosenthal, Y., Anand, P., and McGrath, S. M.: Remote and local drivers of Pleistocene South Asian summer monsoon precipitation: A test for future predictions, *Sci. Adv.*, 7, eabg3848, <https://doi.org/10.1126/sciadv.abg3848>, 2021.
- Cortese, Giuseppe; Abelmann, Andrea; Gersonde, Rainer (2004): Estimation of sea surface temperatures and salinity of ODP Site 177-1089 (Appendix A) [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.712940>, Supplement to: Cortese, G et al. (2004): A glacial warm water anomaly in the subantarctic Atlantic Ocean, near the Agulhas Retroflexion. *Earth and Planetary Science Letters*, 222(3-4), 767-778, <https://doi.org/10.1016/j.epsl.2004.03.029>.
- Cortina Guerra, Aleix; Sierro, Francisco Javier; Flores, José-Abel; Martrat, Belén; Grimalt, Joan O (2015): Alkenone-based SST measurements from MIS 3 to MIS 11 in the northwestern Mediterranean Sea [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.854682>.
- Dyez, K. A. and Ravelo, A. C.: Dynamical changes in the tropical Pacific warm pool and zonal SST gradient during the Pleistocene, *Geophysical Research Letters*, 41, 7626–7633, <https://doi.org/10.1002/2014GL061639>, 2014.
- Dyez, K. A., Ravelo, A. C., and Mix, A. C.: Evaluating drivers of Pleistocene eastern tropical Pacific sea surface temperature, *Paleoceanography*, 31, 1054–1069, <https://doi.org/10.1002/2015PA002873>, 2016.
- Gibson, K. A. and Peterson, L. C.: A 0.6 million year record of millennial-scale climate variability in the tropics, *Geophysical Research Letters*, 41, 969–975, <https://doi.org/10.1002/2013GL058846>, 2016.

- De Garidel-Thoron, T., Rosenthal, Y., Bassinot, F., and Beaufort, L.: Stable sea surface temperatures in the western Pacific warm pool over the past 1.75 million years, *Nature*, 433, 294–298, <https://doi.org/10.1038/nature03189>, 2005.
- Frigola, Jaime (2020): Borehole PRGL1-4 and sediment core MD99-2348 records from the Gulf of Lion, Mediterranean Sea: age model, *Globigerina bulloides*  $\delta^{18}\text{O}$ , grain-size, XRF-Ca [dataset publication series]. PANGAEA, <https://doi.org/10.1594/PANGAEA.911440>.
- Gebhardt, Holger; Sarnthein, Michael; Grootes, Pieter Meiert; Kiefer, Thorsten; Kühn, Hartmut; Schmieder, Frank; Röhl, Ursula (2008): Stable oxygen isotopes on *Neogloboquadrina pachyderma* sinistral of sediment core MD01-2416 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.626598>, In supplement to: Gebhardt, H et al. (2008): Paleonutrient and productivity records from the subarctic North Pacific for Pleistocene glacial terminations I to V. *Paleoceanography*, 23(4), PA4212, <https://doi.org/10.1029/2007PA001513>.
- Gibson, K. A. and Peterson, L. C.: A 0.6 million year record of millennial-scale climate variability in the tropics, *Geophysical Research Letters*, 41, 969–975, <https://doi.org/10.1002/2013GL058846>, 2014.
- Hayward, Bruce William; Scott, George H; Crundwell, Martin P; Kennett, James P; Carter, Lionel; Neil, Helen L; Sabaa, Ashwaq T; Wilson, Kate; Rodger, J Stuart; Schaefer, Grace; Grenfell, Hugh R; Li, Qianyu (2008): (Appendix 1) Census data of planktic foraminiferal faunas together with estimates of mean annual SST for ODP Site 181-1123 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.742593>, In supplement to: Hayward, BW et al. (2008): The effect of submerged plateaux on Pleistocene gyral circulation and sea-surface temperatures in the Southwest Pacific. *Global and Planetary Change*, 63(4), 309-316, <https://doi.org/10.1016/j.gloplacha.2008.07.003>.
- Herbert, Timothy D; Lawrence, Kira T; Tzanova, Alexandrina; Peterson, Laura C; Caballero-Gill, Rocio P; Kelly, Christopher S (2018): (Table S2) SST estimates as a function of age, ODP Site 162-982 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.885578>, In supplement to: Herbert, TD et al. (2016): Late Miocene global cooling and the rise of modern ecosystems. *Nature Geoscience*, 9(11), 843-847, <https://doi.org/10.1038/ngeo2813>.
- Herbert, Timothy D; Peterson, Laura C; Lawrence, Kira T; Liu, Zhonghui (2017): Plio-Pleistocene tropical alkenone SST reconstructions for ODP Site 117-722 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.874749>, In supplement to: Herbert, TD et al. (2010): Tropical Ocean Temperatures Over the Past 3.5 Million Years. *Science*, 328(5985), 1530-1534, <https://doi.org/10.1126/science.1185435>.
- Herbert, Timothy D; Peterson, Laura C; Lawrence, Kira T; Liu, Zhonghui (2017): Plio-Pleistocene tropical alkenone SST reconstructions for ODP Site 138-846 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.874750>, In supplement to: Herbert, TD et al. (2010): Tropical Ocean Temperatures Over the Past 3.5 Million Years. *Science*, 328(5985), 1530-1534, <https://doi.org/10.1126/science.1185435>.
- Herbert, Timothy D; Peterson, Laura C; Lawrence, Kira T; Liu, Zhonghui (2017): Plio-Pleistocene tropical alkenone SST reconstructions for ODP Site 184-1146 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.874751>, In supplement to: Herbert, TD et al. (2010): Tropical Ocean Temperatures Over the Past 3.5 Million Years. *Science*, 328(5985), 1530-1534, <https://doi.org/10.1126/science.1185435>.
- Herbert, T. D., Schuffert, J. D., Andreasen, D., Heusser, L., Lyle, M., Mix, A., Ravelo, A. C., Stott, L. D., and Herguera, J. C.: Collapse of the California Current During Glacial Maxima Linked to Climate Change on Land, *Science*, 293, 71–76, <https://doi.org/10.1126/science.1059209>, 2001.
- Ho, Sze Ling; Mollenhauer, Gesine; Lamy, Frank; Martínez-García, Alfredo; Mohtadi, Mahyar; Gersonde, Rainer; Hebbeln, Dierk; Nunez-Ricardo, Samuel; Rosell-Melé, Antoni; Tiedemann, Ralf (2012): Alkenone indices, sea surface temperature estimates and foraminiferal  $\delta^{18}\text{O}$  of sediment core GeoB3327-5 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.792638>, In supplement to: Ho, SL et al. (2012): Sea surface temperature variability in the Pacific sector of the Southern Ocean over the past 700 kyr. *Paleoceanography*, 27, PA4202, <https://doi.org/10.1029/2012PA002317>.
- Ho, Sze Ling; Mollenhauer, Gesine; Lamy, Frank; Martínez-García, Alfredo; Mohtadi, Mahyar; Gersonde, Rainer; Hebbeln, Dierk; Nunez-Ricardo, Samuel; Rosell-Melé, Antoni; Tiedemann, Ralf (2012): Alkenone indices, sea surface temperature estimates of sediment core PS75/034-2 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.792639>, In supplement to: Ho, SL et al. (2012): Sea surface temperature variability in the Pacific sector of the Southern Ocean over the past 700 kyr. *Paleoceanography*, 27, PA4202, <https://doi.org/10.1029/2012PA002317>.

- Hodell, D. A., Charles, C. D., and Ninnemann, U. S.: Comparison of interglacial stages in the South Atlantic sector of the southern ocean for the past 450 kyr: implications for Marine Isotope Stage (MIS) 11, 2000.
- Hodell, David A; Crowhurst, Simon J; Skinner, Luke C; Tzedakis, Polychronis C; Margari, Vasiliki; Channell, James E T; Kamenov, George D; Maclachlan, Suzanne; Rothwell, Robin Guy (2013): Iberian Margin 420 kyr geochemical and color variations record [dataset publication series]. PANGAEA, <https://doi.org/10.1594/PANGAEA.831762>, Supplement to: Hodell, DA et al. (2013): Response of Iberian Margin sediments to orbital and suborbital forcing over the past 420 ka. *Paleoceanography*, 28(1), 185-199, <https://doi.org/10.1002/palo.20017>.
- Hodell, David A; Crowhurst, Simon J; Lourens, Lucas Joost; Margari, Vasiliki; Nicolson, John; Rolfe, James E; Skinner, Luke C; Thomas, Nicola C; Tzedakis, Polychronis C; Mleneck-Vautravers, Maryline J; Wolff, Eric William (2023): Benthic and planktonic oxygen and carbon isotopes and XRF data at IODP Site U1385 and core MD01-2444 from 0 to 1.5 Ma [dataset bundled publication]. PANGAEA, <https://doi.org/10.1594/PANGAEA.951401>
- Hodell, David A; Charles, Christopher D; Curtis, Jason H; Mortyn, P Graham; Ninnemann, Ulysses S; Venz, Kathryn A (2003): (Table T2) Stable oxygen and carbon isotope ratios of the benthic and planktonic foraminifera, carbonate content, and percent fragmentation of planktonic foraminifera for ODP Site 177-1089 in the Southern Ocean [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.218128>, In supplement to: Hodell, DA et al. (2003): Data Report: Oxygen isotope stratigraphy of ODP Leg 117 sites 1088, 1089, 1090, 1093, and 1094. In: Gersonde, R; Hodell, DA; Blum, P (eds.) *Proceedings of the Ocean Drilling Program, Scientific Results*, College Station, TX (Ocean Drilling Program), 177, 1-26, <https://doi.org/10.2973/odp.proc.sr.177.120.2003>
- Holbourn, Ann E; Kuhnt, Wolfgang; Kawamura, Hiroshi; Jian, Zhimin; Grootes, Pieter Meiert; Erlenkeuser, Helmut; Xu, Jian (2005): (Figure 2) Stable isotopes on planktic foraminifera of sediment core MD01-2378 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.263757>, In supplement to: Holbourn, AE et al. (2005): Orbitally-paced paleoproductivity variations in the Timor Sea and Indonesian Throughflow variability during the last 460-ky. *Paleoceanography*, 20(3), PA3002, <https://doi.org/10.1029/2004PA001094>.
- Howard, William R; Prell, Warren L (1992): (Table 6) Faunal dissimilarity and sea surface temperature estimates for sediment core ELT45.029 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.733683>, In supplement to: Howard, WR; Prell, WL (1992): Late Quaternary surface circulation of the southern Indian Ocean and its relationship to orbital variations. *Paleoceanography*, 7(1), 79-118, <https://doi.org/10.1029/91PA02994>.
- Howard, William R; Prell, Warren L (1992): (Table 6) Faunal dissimilarity and sea surface temperature estimates for sediment core ELT49.017-PC [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.733684>, In supplement to: Howard, WR; Prell, WL (1992): Late Quaternary surface circulation of the southern Indian Ocean and its relationship to orbital variations. *Paleoceanography*, 7(1), 79-118, <https://doi.org/10.1029/91PA02994>.
- Howard, William R; Prell, Warren L (1992): (Table 6) Faunal dissimilarity and sea surface temperature estimates for sediment core ELT49.018-PC [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.733685>, In supplement to: Howard, WR; Prell, WL (1992): Late Quaternary surface circulation of the southern Indian Ocean and its relationship to orbital variations. *Paleoceanography*, 7(1), 79-118, <https://doi.org/10.1029/91PA02994>.
- Howard, William R; Prell, Warren L (1992): (Table 6) Faunal dissimilarity and sea surface temperature estimates for sediment core ELT49.021-PC [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.733686>, In supplement to: Howard, WR; Prell, WL (1992): Late Quaternary surface circulation of the southern Indian Ocean and its relationship to orbital variations. *Paleoceanography*, 7(1), 79-118, <https://doi.org/10.1029/91PA02994>.
- Imbrie, John D; McIntyre, Andrew (2006): SST vs time for core RC12-294 (specmap.054) [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.441752>.
- Irvali, N., Galaasen, E. V., Ninnemann, U. S., Rosenthal, Y., Born, A., and Kleiven, H. (Kikki) F.: A low climate threshold for south Greenland Ice Sheet demise during the Late Pleistocene, *Proc. Natl. Acad. Sci. U.S.A.*, 117, 190–195, <https://doi.org/10.1073/pnas.1911902116>, 2020.
- Jia, Q., Li, T., Xiong, Z., Steinke, S., Jiang, F., Chang, F., and Qin, B.: Hydrological variability in the western tropical Pacific over the past 700 kyr and its linkage to Northern Hemisphere climatic change, *Palaeogeography, Palaeoclimatology, Palaeoecology*, 493, 44–54, <https://doi.org/10.1016/j.palaeo.2017.12.039>, 2018.
- Le, Jianning; Shackleton, Nicholas J (1992): (Table 2) Planktonic foraminifera concentrations and stable oxygen isotope ratios of sediment core ERDC-093P [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.52476>,

- In supplement to: Le, J; Shackleton, NJ (1992): Carbonate dissolution fluctuations in the western equatorial Pacific during the Late Quaternary. *Paleoceanography*, 7(1), 21-42, <https://doi.org/10.1029/91PA02854>.
- Lea, D. W.: The 100 000-Yr Cycle in Tropical SST, Greenhouse Forcing, and Climate Sensitivity, *J. Climate*, 17, 2170–2179, [https://doi.org/10.1175/1520-0442\(2004\)017<2170:TYCITS>2.0.CO;2](https://doi.org/10.1175/1520-0442(2004)017<2170:TYCITS>2.0.CO;2), 2004.
- Lemoine, F. (1998). Changements de l'hydrologie de surface (temperature et salinite) de l'ocean Austral en relation avec les variations de la circulation thermohaline au cours des deux derniers cycles climatiques. thesis, Univ. Paris VI, Paris.
- Li, Li; Li, Qianyu; Tian, Jun; Wang, Pinxian; Wang, Hui; Liu, Zhonghui (2011): (Appendix A) Sea surface temperature reconstruction for ODP Site 184-1143 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.786444>, Supplement to: Li, L et al. (2011): A 4-Ma record of thermal evolution in the tropical western Pacific and its implications on climate change. *Earth and Planetary Science Letters*, 309(1-2), 10-20, <https://doi.org/10.1016/j.epsl.2011.04.016>.
- Li, L., Wang, H., Li, J., Zhao, M., and Wang, P.: Changes in sea surface temperature in western South China Sea over the past 450 ka, *Chin. Sci. Bull.*, 54, 3335–3343, <https://doi.org/10.1007/s11434-009-0083-9>, 2009.
- Lo, Li; Chang, Sheng-Pu; Wei, Kuo-Yen; Lee, Shih-Yu; Ou, Tsong-Hua; Chen, Yi-Chi; Chuang, Chih-Kai; Mii, Horng-Sheng; Burr, George S; Chen, Min-Te; Tung, Ying-Hung; Tsai, Meng-Chieh; Hodell, David A; Shen, Chuan-Chou (2019): Age model, oxygen isotopes and Mg/Ca ratios of Globigerinoides ruber from sediment core MD05-2925 off the Solomon Sea [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.899209>, In: Lo, L et al. (2019): Age model, oxygen isotopes and Mg/Ca ratios from planktonic foraminifera of sediment core MD05-2925 off the Solomon Sea [dataset publication series]. PANGAEA, <https://doi.org/10.1594/PANGAEA.899217>.
- Lougheed, B. C. and Obrochta, S. P.: A Rapid, Deterministic Age-Depth Modeling Routine for Geological Sequences With Inherent Depth Uncertainty, *Paleoceanog and Paleoclimatol*, 34, 122–133, <https://doi.org/10.1029/2018PA003457>, 2019.
- Loulergue, L., Schilt, A., Spahni, R., Masson-Delmotte, V., Blunier, T., Lemieux, B., Barnola, J.-M., Raynaud, D., Stocker, T. F., and Chappellaz, J.: Orbital and millennial-scale features of atmospheric CH<sub>4</sub> over the past 800,000 years, *Nature*, 453, 383–386, <https://doi.org/10.1038/nature06950>, 2008.
- Lyle, M., Mix, A., & Pisias, N. (2002). Patterns of CaCO<sub>3</sub> deposition in the eastern tropical Pacific Ocean for the last 150 kyr: Evidence for a southeast Pacific depositional spike during marine isotope stage (MIS) 2. *Paleoceanography*, 17(2), 3-1.
- Martínez-García, A., Rosell-Melé, A., Geibert, W., Gersonde, R., Masqué, P., Gaspari, V., and Barbante, C.: Links between iron supply, marine productivity, sea surface temperature, and CO<sub>2</sub> over the last 1.1 Ma, *Paleoceanography*, 24, 2008PA001657, <https://doi.org/10.1029/2008PA001657>, 2009.
- Martínez Méndez, Gema; Zahn, Rainer; Hall, Ian R; Peeters, Frank J C; Pena, Leopoldo D; Cacho, Isabel; Negre, César (2010): Proxy records of Globigerina bulloides from splicings of MD96-2080 and MD02-2594, Agulhas Bank Splice (ABS) [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.810663>, In supplement to: Martínez Méndez, G et al. (2010): Contrasting multiproxy reconstructions of surface ocean hydrography in the Agulhas Corridor and implications for the Agulhas Leakage during the last 345,000 years. *Paleoceanography*, 25(4), PA4227, <https://doi.org/10.1029/2009PA001879>.
- McManus, J. F., Oppo, D. W., and Cullen, J. L.: A 0.5-Million-Year Record of Millennial-Scale Climate Variability in the North Atlantic, *Science*, 283, 971–975, <https://doi.org/10.1126/science.283.5404.971>, 1999.
- Medina-Elizalde, Martín; Lea, David W (2005): (Table S2) Stable oxygen isotope record and Mg/Ca ratios of Globigerinoides ruber from ODP Hole 130-806B [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.772014>, In supplement to: Medina-Elizalde, M; Lea, DW (2005): The Mid-Pleistocene Transition in the Tropical Pacific. *Science*, 310(5750), 1009-1012, <https://doi.org/10.1126/science.1115933>.
- Naafs, Bernhard David A; Hefter, Jens; Acton, Gary D; Haug, Gerald H; Martínez-García, Alfredo; Pancost, Richard D; Stein, Ruediger (2012): Concentrations and accumulation rates of biomarkers and SSTs at IODP Site 306-U1313 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.757946>, In supplement to: Naafs, BDA et al. (2012): Strengthening of North American dust sources during the late Pliocene (2.7 Ma). *Earth and Planetary Science Letters*, 317-318, 8-19, <https://doi.org/10.1016/j.epsl.2011.11.026>.

- Nehrbass-Ahles, C., Shin, J., Schmitt, J., Bereiter, B., Joos, F., Schilt, A., Schmidely, L., Silva, L., Teste, G., Grilli, R., Chappellaz, J., Hodell, D., Fischer, H., and Stocker, T. F.: Abrupt CO<sub>2</sub> release to the atmosphere under glacial and early interglacial climate conditions, *Science*, 369, 1000–1005, <https://doi.org/10.1126/science.aay8178>, 2020.
- Nürnberg, D., Ziegler, M., Karas, C., Tiedemann, R., and Schmidt, M. W.: Interacting Loop Current variability and Mississippi River discharge over the past 400 kyr, *Earth and Planetary Science Letters*, 272, 278–289, <https://doi.org/10.1016/j.epsl.2008.04.051>, 2008.
- Nürnberg, D., Ziegler, M., Karas, C., Tiedemann, R., and Schmidt, M. W.: Interacting Loop Current variability and Mississippi River discharge over the past 400 kyr, *Earth and Planetary Science Letters*, 272, 278–289, <https://doi.org/10.1016/j.epsl.2008.04.051>, 2008.
- Oppo, D. W., Linsley, B. K., Rosenthal, Y., Dannenmann, S., and Beaufort, L.: Orbital and suborbital climate variability in the Sulu Sea, western tropical Pacific, *Geochem Geophys Geosyst*, 4, 1–20, <https://doi.org/10.1029/2001GC000260>, 2003.
- Pahnke, Katharina; Zahn, Rainer; Elderfield, Henry; Schulz, Michael (2003): Mg/Ca ratio and sea-surface temperature (SST) of sediment core MD97-2120 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.208133>, In supplement to: Pahnke, K et al. (2003): 340,000-Year Centennial-Scale Marine Record of Southern Hemisphere. *Science*, 301(5635), 948–952, <https://doi.org/10.1126/science.1084451>.
- Pahnke, Katharina; Zahn, Rainer; Elderfield, Henry; Schulz, Michael (2003): Stable oxygen isotopes ( $\delta^{18}\text{O}$ ) of sediment core MD97-2120 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.208132>, In supplement to: Pahnke, K et al. (2003): 340,000-Year Centennial-Scale Marine Record of Southern Hemisphere. *Science*, 301(5635), 948–952, <https://doi.org/10.1126/science.1084451>.
- Paillard, D., Labeyrie, L., and Yiou, P.: Macintosh Program performs time-series analysis, *EoS Transactions*, 77, 379–379, <https://doi.org/10.1029/96EO00259>, 1996.
- Peeters, F. J. C., Acheson, R., Brummer, G.-J. A., De Ruijter, W. P. M., Schneider, R. R., Ganssen, G. M., Ufkes, E., and Kroon, D.: Vigorous exchange between the Indian and Atlantic oceans at the end of the past five glacial periods, *Nature*, 430, 661–665, <https://doi.org/10.1038/nature02785>, 2004.
- Peterson, L. C., Lawrence, K. T., Herbert, T. D., Caballero-Gill, R., Wilson, J., Huska, K., Miller, H., Kelly, C., Seidenstein, J., Hovey, D., and Holte, L.: Plio-Pleistocene Hemispheric (A)Symmetries in the Northern and Southern Hemisphere Midlatitudes, *Paleoceanog and Paleoclimatol*, 35, e2019PA003720, <https://doi.org/10.1029/2019PA003720>, 2020.
- Pisias, N. G. and Mix, A. C.: Spatial and temporal oceanographic variability of the eastern equatorial Pacific during the Late Pleistocene: Evidence from radiolaria microfossils, *Paleoceanography*, 12, 381–393, <https://doi.org/10.1029/97PA00583>, 1997.
- Rodrigues, Teresa; Voelker, Antje H L; Grimalt, Joan O; Abrantes, Fatima F; Naughton, Filipa (2011): Sea surface temperature reconstruction for the middle Pleistocene from sediment core MD03-2699 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.761771>, Supplement to: Rodrigues, T et al. (2011): Iberian Margin Sea Surface Temperature during MIS 15 to 9 (580–300 ka): Glacial suborbital variability versus interglacial stability. *Paleoceanography*, 26, PA1204, <https://doi.org/10.1029/2010PA001927>.
- Romero, Oscar E; Kim, Ji-Hoon; Bárcena, María Angeles; Hall, Ian R; Zahn, Rainer; Schneider, Ralph R (2018): Alkenone concentration and sea surface temperature of sediment core MD02-2588 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.895560>, In supplement to: Romero, OE et al. (2015): High-latitude forcing of diatom productivity in the southern Agulhas Plateau during the past 350 kyr. *Paleoceanography*, 30(2), 118–132, <https://doi.org/10.1002/2014PA002636>.
- Ronge, Thomas A; Tiedemann, Ralf (2014): Mg/Ca ratio and calculated sea surface temperature of sediment core MD06-2986 [dataset]. Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Bremerhaven, PANGAEA, <https://doi.org/10.1594/PANGAEA.835641>.
- Rosell-Melé, Antoni; Martínez-García, Alfredo; McClymont, Erin L (2014): Alkenone accumulation rates and SST reconstruction for ODP Site 175-1084 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.841832>, In supplement to: Rosell-Melé, A et al. (2014): Persistent warmth across the Benguela upwelling system during the Pliocene epoch. *Earth and Planetary Science Letters*, 386, 10–20, <https://doi.org/10.1016/j.epsl.2013.10.041>

- Ruddiman, William F; Raymo, Maureen E; Martinson, Douglas G; Clement, Bradford M; Backman, Jan (1989): (Table A2) Sea surface temperature reconstruction of DSDP Site 94-607 in the North Atlantic [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.52373>, In supplement to: Ruddiman, WF et al. (1989): Pleistocene evolution: northern hemisphere ice sheets and North Atlantic Ocean. *Paleoceanography*, 4(4), 353-412, <https://doi.org/10.1029/PA004i004p00353>.
- Sarnthein, Michael (1997): Stable isotope analysis on planktic and benthic foraminifera on sediment core profile GeoB1113-4/-7 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.54395>.
- Schmidt, M. W., Vautravers, M. J., and Spero, H. J.: Western Caribbean sea surface temperatures during the late Quaternary, *Geochem Geophys Geosyst*, 7, 2005GC000957, <https://doi.org/10.1029/2005GC000957>, 2006.
- Scussolini, Paolo; Peeters, Frank J C (2013): The record of stable isotope composition of surface and thermocline planktic foraminifera from sediment core 64PE-174P13 for the last 460,000 years [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.825688>, Supplement to: Scussolini, P; Peeters, FJC (2013): A record of the last 460 thousand years of upper ocean stratification from the central Walvis Ridge, South Atlantic. *Paleoceanography*, 28(3), 426-439, <https://doi.org/10.1002/palo.20041>.
- Shackleton, N. J., Berger, A., and Peltier, W. R.: An alternative astronomical calibration of the lower Pleistocene timescale based on ODP Site 677, *Transactions of the Royal Society of Edinburgh: Earth Sciences*, 81, 251–261, <https://doi.org/10.1017/S0263593300020782>, 1990.
- Stuut, Jan-Berend W; Prins, Maarten Arnoud; Schneider, Ralph R; Weltje, Gert Jan; Jansen, J H Fred; Postma, George (2002): (Fig. 2) Stable oxygen isotopes on planktic foraminifera of sediment core MD96-2094 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.230294>, In supplement to: Stuut, J-BW et al. (2002): A 300-kyr record of aridity and wind strength in southwestern Africa: inferences from grain-size distributions of sediments on Walvis Ridge, SE Atlantic. *Marine Geology*, 180(1-4), 221-233, [https://doi.org/10.1016/S0025-3227\(01\)00215-8](https://doi.org/10.1016/S0025-3227(01)00215-8).
- Tachikawa, K., Timmermann, A., Vidal, L., Sonzogni, C., and Timm, O. E.: CO2 radiative forcing and Intertropical Convergence Zone influences on western Pacific warm pool climate over the past 400ka, *Quaternary Science Reviews*, 86, 24–34, <https://doi.org/10.1016/j.quascirev.2013.12.018>, 2014.
- Venz, Kathryn A; Hodell, David A; Stanton, Cathy; Warnke, Detlef A (1999): Stable carbon and oxygen isotope ratios of planktonic and benthic foraminifera from ODP Site 162-982 in the North Atlantic [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.700897>, Supplement to: Venz, KA et al. (1999): A 1.0 myr record of glacial North Atlantic Intermediate Water variability from ODP Site 982 in the northeast Atlantic. *Paleoceanography*, 14(1), 42-52, <https://doi.org/10.1029/1998PA900013>.
- Voelker, Antje H L; Rodrigues, Teresa; Billups, Katharina; Oppo, Delia W; McManus, Jerry F; Stein, Ruediger; Hefter, Jens; Grimalt, Joan O (2010): Stable carbon and oxygen isotopic composition of *Globobulimina inflata* of sediment core MD03-2699 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.742785>, In supplement to: Voelker, AHL et al. (2010): Variations in mid-latitude North Atlantic surface water properties during the mid-Brunhes (MIS 9-14) and their implications for the thermohaline circulation. *Climate of the Past*, 6(4), 531-552, <https://doi.org/10.5194/cp-6-531-2010>.
- Voelker, Antje H L; de Abreu, Lucia (2011): Stable oxygen and carbon isotope ratios of *Globigerina bulloides* of sediment core MD95-2040 [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.737413>, In supplement to: Voelker, AHL; de Abreu, L (2011): A Review of Abrupt Climate Change Events in the Northeastern Atlantic Ocean (Iberian Margin): Latitudinal, Longitudinal and Vertical Gradients. In: Rashid, H; Polyak, L; Mosley-Thompson, E (eds.), *Abrupt Climate Change: Mechanisms, Patterns, and Impacts*. Geophysical Monograph Series (AGU, Washington D.C.), 193, 15-37, <https://doi.org/10.1029/2010GM001021>.
- Windler, G., Tierney, J. E., DiNezio, P. N., Gibson, K., and Thunell, R.: Shelf exposure influence on Indo-Pacific Warm Pool climate for the last 450,000 years, *Earth and Planetary Science Letters*, 516, 66–76, <https://doi.org/10.1016/j.epsl.2019.03.038>, 2019.
- Zhang, Shuai; Yu, Zhoufei; Gong, Xun; Wang, Yue; Chang, Fengming; Li, Tiegang (2021): Stable oxygen isotope and Mg/Ca ratios of planktonic foraminifera from KX97322-4 (KX22-4) [dataset]. PANGAEA, <https://doi.org/10.1594/PANGAEA.939377>.
- Ziegler, M., Lourens, L. J., Tuenter, E., and Reichert, G.-J.: High Arabian Sea productivity conditions during MIS 13 – odd monsoon event or intensified overturning circulation at the end of the Mid-Pleistocene transition?, *Clim. Past*, 6, 63–76, <https://doi.org/10.5194/cp-6-63-2010>, 2010.

