Supporting Information for "A nutrient effect on the TEX_{86} paleotemperature proxy"

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Introduction

This document provides supplementary information for the main text, including (a) supplementary texts for extended methods and materials, (b) a summary table of data sources of the updated global coretop TEX_{86} dataset, (c) brief descriptions of supple-

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mentary datasets and codes reposited on Zenodo (Rattanasriampaipong et al., 2025) and Github repositories (`https://github.com/PaleoLipidRR/nutrient-effect-on-TEX`).

Text S1: Extended Data and Methods

1. New core-top TEX_{86} data

2. Downcore samples from Tasman Sea

3. GDGT determinations

Data Set S1

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References

Bale, N. J., Villanueva, L., Hopmans, E. C., Schouten, S., & Sinninghe Damsté, J. S. (2013). Different seasonality of pelagic and benthic Thaumarchaeota in the North Sea. *Biogeosciences*, *10*(11), 7195–7206. Retrieved from `https://bg.copernicus.org/articles/10/7195/2013/` doi: 10.5194/bg-10-7195-2013

Castañeda, I. S., Schefuß, E., Pätzold, J., Sinninghe Damsté, J. S., Weldeab, S., & Schouten, S. (2010, mar). Millennial-scale sea surface temperature changes in the eastern Mediterranean (Nile River Delta region) over the last 27,000 years. *Paleoceanography*, *25*(1). Retrieved from `https://doi.org/10.1029/2009PA001740` doi: https://doi.org/10.1029/2009PA001740

Ceccopieri, M., Carreira, R. S., Wagener, A. L. R., Hefter, J. H., & Mollenhauer, G. (2018). On the application of alkenone- and GDGT-based temperature proxies in the south-eastern Brazilian continental margin. *Organic Geochemistry*, *126*, 43–56. doi: 10.1016/j.orggeochem.2018.10.009

Chazen, C. R. (2011). *Holocene climate evolution of the eastern tropical Pacific told from high resolution climate records from the Peru margin and equatorial upwelling regions* (Doctoral dissertation, Brown University). doi: https://doi.org/10.7301/Z0D50K7P

Chen, J., Hu, P., Li, X., Yang, Y., Song, J., Li, X., ... Lü, X. (2018). Impact of water depth on the distribution of iGDGTs in the surface sediments from the northern South China Sea: applicability of TEX86 in marginal seas. *Frontiers of Earth Science*, *12*(1), 95–107. doi: 10.1007/s11707-016-0620-1

Chen, W., Mohtadi, M., Schefuß, E., & Mollenhauer, G. (2014). Organic-geochemical proxies of sea surface temperature in surface sediments of the tropical eastern Indian Ocean. *Deep Sea Research Part I: Oceanographic Research Papers*, *88*, 17–29. doi: https://doi.org/10.1016/j.dsr.2014.03.005

Fallet, U., Castañeda, I. S., Henry-Edwards, A., Richter, T. O., Boer, W., Schouten, S., & Brummer, G.-J. (2012, jan). Sedimentation and burial of organic and inorganic temperature proxies in the Mozambique Channel, SW Indian Ocean. *Deep Sea Research Part I: Oceanographic Research Papers*, *59*, 37–53. doi: 10.1016/j.dsr.2011.10.002

Hagemann, J. R., Lembke-Jene, L., Lamy, F., Vorrath, M.-E., Kaiser, J., Müller, J., ... Tiedemann, R. (2023). *Collection of GDGT-derived temperatures of 22 new sites at the Chilean margin, supplemented by various previously published sites.* [Dataset]. PANGAEA. doi: 10.1594/PANGAEA.964270

Harning, D. J., Andrews, J. T., Belt, S. T., Cabedo-Sanz, P., Geirsdottir, A., Dildar, N., ... Sepúlveda, J. (2019). Sea Ice Control on Winter Subsurface Temperatures of the North Iceland Shelf During the Little Ice Age: A TEX86 Calibration Case Study. *Paleoceanography and Paleoclimatology*, *34*(6), 1006–1021. doi: 10.1029/2018PA003523

Harning, D. J., Holman, B., Woelders, L., Jennings, A. E., & Sepúlveda, J. (2023). Biomarker characterization of the North Water Polynya, Baffin Bay: implications for local sea ice and temperature proxies. *Biogeosciences*, *20*(1), 229–249. Retrieved from https://doi.org/10.1594/PANGAEA.956212https://bg.copernicus.org/articles/20/229/2023/ doi: 10.5194/bg-20-229-2023

Hernández-Sánchez, M. T., Woodward, E. M. S., Taylor, K. W. R., Henderson, G. M., & Pancost, R. D. (2014). Variations in GDGT distributions through the water column in the South East Atlantic Ocean. *Geochimica et Cosmochimica Acta*, *132*, 337–348. doi: https://doi.org/10.1016/j.gca.2014.02.009

Ho, S. L., Mollenhauer, G., Fietz, S., Martínez-Garcia, A., Lamy, F., Rueda, G., ... Tiedemann, R. (2014). Appraisal of TEX86 and TEX86L thermometries in subpolar and polar regions. *Geochimica et Cosmochimica Acta*, *131*, 213–226. doi: https://doi.org/10.1016/j.gca.2014.01.001

Ho, S. L., Yamamoto, M., Mollenhauer, G., & Minagawa, M. (2011). Core top TEX86 values in the south and equatorial Pacific. *Organic Geochemistry*, *42*(1), 94–99. doi: https://doi.org/10.1016/j.orggeochem.2010.10.012

Hu, J., Meyers, P. A., Chen, G., Peng, P., & Yang, Q. (2012). Archaeal and bacterial glycerol dialkyl glycerol tetraethers in sediments from the Eastern Lau Spreading Center, South Pacific Ocean. *Organic Geochemistry*, *43*, 162–167. doi: https://doi.org/10.1016/j.orggeochem.2011.10.012

Jaeschke, A., Wengler, M., Hefter, J., Ronge, T. A., Geibert, W., Mollenhauer, G., ... Lamy, F. (2017). A biomarker perspective on dust, productivity, and sea surface temperature in the Pacific sector of the Southern Ocean. *Geochimica et Cosmochimica Acta*, *204*, 120–139. doi: 10.1016/j.gca.2017.01.045

Jia, G., Zhang, J., Chen, J., Peng, P., & Zhang, C. L. (2012). Archaeal tetraether lipids record subsurface water temperature in the South China Sea. *Organic Geochemistry*, *50*, 68–77. doi: https://doi.org/10.1016/j.orggeochem.2012.07.002

Kaiser, J., Ruggieri, N., Hefter, J., Siegel, H., Mollenhauer, G., Arz, H. W., & Lamy, F. (2014). Lipid biomarkers in surface sediments from the Gulf of Genoa, Ligurian sea (NW Mediterranean sea) and their potential for the reconstruction of palaeo-environments. *Deep Sea Research Part I: Oceanographic Research Papers*, *89*, 68–83. Retrieved from `https://www.sciencedirect.com/science/article/pii/S0967063714000661` doi: https://doi.org/10.1016/j.dsr.2014.04.009

Kaiser, J., Schouten, S., Kilian, R., Arz, H. W., Lamy, F., & Sinninghe Damsté, J. S. (2015). Isoprenoid and branched GDGT-based proxies for surface sediments from marine, fjord and lake environments in Chile. *Organic Geochemistry*, *89-90*, 117–127. doi: 10.1016/j.orggeochem.2015.10.007

Kim, J.-H., Schouten, S., Hopmans, E. C., Donner, B., & Sinninghe Damsté, J. S. (2008). Global sediment core-top calibration of the TEX86 paleothermometer in the ocean. *Geochimica et Cosmochimica Acta*, *72*(4), 1154–1173. doi: https://doi.org/10.1016/j.gca.2007.12.010

Kim, J.-H., Schouten, S., Rodrigo-Gámiz, M., Rampen, S., Marino, G., Huguet, C., ... Sinninghe Damsté, J. S. (2015). Influence of deep-water derived isoprenoid tetraether lipids on the TEX86H paleothermometer in the Mediterranean Sea. *Geochimica et Cosmochimica Acta*, *150*, 125–141. doi: 10.1016/j.gca.2014.11.017

Kim, J.-H., van der Meer, J., Schouten, S., Helmke, P., Willmott, V., Sangiorgi, F., ... Sinninghe Damsté, J. S. (2010). New indices and calibrations derived from the distribution of crenarchaeal isoprenoid tetraether lipids: Implications for past

sea surface temperature reconstructions. *Geochimica et Cosmochimica Acta*, *74*(16), 4639–4654. doi: 10.1016/j.gca.2010.05.027

Kim, J.-H., Villanueva, L., Zell, C., & Sinninghe Damsté, J. S. (2016). Biological source and provenance of deep-water derived isoprenoid tetraether lipids along the Portuguese continental margin. *Geochimica et Cosmochimica Acta*, *172*, 177–204. doi: 10.1016/j.gca.2015.09.010

Kusch, S., Rethemeyer, J., Hopmans, E. C., Wacker, L., & Mollenhauer, G. (2016). Factors influencing 14C concentrations of algal and archaeal lipids and their associated sea surface temperature proxies in the Black Sea. *Geochimica et Cosmochimica Acta*, *188*, 35–57. doi: 10.1016/j.gca.2016.05.025

Lamping, N., Müller, J., Hefter, J., Mollenhauer, G., Haas, C., Shi, X., ... Hillenbrand, C.-D. (2021). Evaluation of lipid biomarkers as proxies for sea ice and ocean temperatures along the Antarctic continental margin. *Climate of the Past*, *17*(5), 2305–2326. doi: 10.5194/cp-17-2305-2021

Leider, A., Hinrichs, K.-U., Mollenhauer, G., & Versteegh, G. J. M. (2010). Core-top calibration of the lipid-based U37K′ and TEX86 temperature proxies on the southern Italian shelf (SW Adriatic Sea, Gulf of Taranto). *Earth and Planetary Science Letters*, *300*(1), 112–124. doi: https://doi.org/10.1016/j.epsl.2010.09.042

Lengger, S. K., Hopmans, E. C., Sinninghe Damsté, J. S., & Schouten, S. (2014). Fossilization and degradation of archaeal intact polar tetraether lipids in deeply buried marine sediments (Peru Margin). *Geobiology*, *12*(3), 212–220. doi: https://doi.org/10.1111/gbi.12081

Liu, X.-L., Zhu, C., Wakeham, S. G., & Hinrichs, K.-U. (2014). In situ production of branched glycerol dialkyl glycerol tetraethers in anoxic marine water columns. *Marine*

Chemistry, *166*, 1–8. Retrieved from https://www.sciencedirect.com/science/article/pii/S0304420314001388 doi: https://doi.org/10.1016/j.marchem.2014.08.008

Lo, L., Belt, S. T., Lattaud, J., Friedrich, T., Zeeden, C., Schouten, S., ... Hodell, D. A. (2018). Precession and atmospheric CO2 modulated variability of sea ice in the central Okhotsk Sea since 130,000 years ago. *Earth and Planetary Science Letters*, *488*, 36–45. doi: 10.1016/j.epsl.2018.02.005

Lü, X., Yang, H., Song, J., Versteegh, G. J. M., Li, X., Yuan, H., ... Xie, S. (2014). Sources and distribution of isoprenoid glycerol dialkyl glycerol tetraethers (GDGTs) in sediments from the east coastal sea of China: Application of GDGT-based paleothermometry to a shallow marginal sea. *Organic Geochemistry*, *75*, 24–35. doi: https://doi.org/10.1016/j.orggeochem.2014.06.007

Nieto-Moreno, V., Martínez-Ruiz, F., Willmott, V., García-Orellana, J., Masqué, P., & Sinninghe Damsté, J. S. (2013). Climate conditions in the westernmost Mediterranean over the last two millennia: An integrated biomarker approach. *Organic Geochemistry*, *55*, 1–10. doi: https://doi.org/10.1016/j.orggeochem.2012.11.001

Pan, A., Yang, Q., Zhou, H., Ji, F., Wang, H., & Pancost, R. D. (2016). A diagnostic GDGT signature for the impact of hydrothermal activity on surface deposits at the Southwest Indian Ridge. *Organic Geochemistry*, *99*, 90–101.

Park, Y.-H., Yamamoto, M., Nam, S.-I., Irino, T., Polyak, L., Harada, N., ... Saitoh, S.-I. (2014). Distribution, source and transportation of glycerol dialkyl glycerol tetraethers in surface sediments from the western Arctic Ocean and the northern Bering Sea. *Marine Chemistry*, *165*, 10–24. doi: https://doi.org/10.1016/j.marchem.2014.07.001

Rattanasriampaipong, R., Tierney, J., & Abell, J. (2025). *Supplementary Data for 'A nutrient effect on the TEX_{86} paleotemperature proxy'.* [Dataset]. Zenodo. doi: 10.5281/zenodo.14806962

Rattanasriampaipong, R., Zhang, Y. G., Pearson, A., Hedlund, B. P., & Zhang, S. (2022). Archaeal lipids trace ecology and evolution of marine ammonia-oxidizing archaea. *Proceedings of the National Academy of Sciences*, *119*(31), e2123193119. doi: 10.1073/pnas.2123193119

Richey, J. N., Hollander, D. J., Flower, B. P., & Eglinton, T. I. (2011, mar). Merging late Holocene molecular organic and foraminiferal-based geochemical records of sea surface temperature in the Gulf of Mexico. *Paleoceanography*, *26*(1). doi: https://doi.org/10.1029/2010PA002000

Richey, J. N., & Tierney, J. E. (2016). GDGT and alkenone flux in the northern Gulf of Mexico: Implications for the TEX86 and UK'_{37} paleothermometers. *Paleoceanography*, *31*(12), 1547–1561. doi: 10.1002/2016pa003032

Rodrigo-Gámiz, M., Rampen, S. W., de Haas, H., Baas, M., Schouten, S., & Sinninghe Damsté, J. S. (2015). Constraints on the applicability of the organic temperature proxies UK'_{37}, TEX_{86} and LDI in the subpolar region around Iceland. *Biogeosciences*, *12*(22), 6573–6590. doi: 10.5194/bg-12-6573-2015

Schukies, J. (2018). *Concentrations of glycerol dialkyl glycerol tetraethers (GDGTs) in core top sediments from continental slope off Newfoundland, Orphan Knoll Region.* [Dataset]. PANGAEA. doi: 10.1594/PANGAEA.894305

Seki, O., Bendle, J. A., Harada, N., Kobayashi, M., Sawada, K., Moossen, H., ... Sakamoto, T. (2014). Assessment and calibration of TEX86 paleothermometry in the Sea of Okhotsk and sub-polar North Pacific region: Implications for paleo-

ceanography. *Progress in Oceanography*, *126*, 254–266. doi: https://doi.org/10.1016/j.pocean.2014.04.013

Seki, O., Sakamoto, T., Sakai, S., Schouten, S., Hopmans, E. C., Sinninghe Damste, J. S., & Pancost, R. D. (2009). Large changes in seasonal sea ice distribution and productivity in the Sea of Okhotsk during the deglaciations. *Geochemistry, Geophysics, Geosystems*, *10*(10). doi: https://doi.org/10.1029/2009GC002613

Shevenell, A. E., Ingalls, A. E., Domack, E. W., & Kelly, C. (2011). Holocene Southern Ocean surface temperature variability west of the Antarctic Peninsula. *Nature*, *470*(7333), 250–254. doi: 10.1038/nature09751

Sinninghe Damsté, J. S. (2016). Spatial heterogeneity of sources of branched tetraethers in shelf systems: The geochemistry of tetraethers in the Berau River delta (Kalimantan, Indonesia). *Geochimica et Cosmochimica Acta*, *186*, 13–31. doi: 10.1016/j.gca.2016.04.033

Sinninghe Damsté, J. S., Warden, L. A., Berg, C., Jürgens, K., & Moros, M. (2022). Evaluation of the distributions of hydroxylated glycerol dibiphytanyl glycerol tetraethers (GDGTs) in Holocene Baltic Sea sediments for reconstruction of sea surface temperature: the effect of changing salinity. *Climate of the Past*, *18*(10), 2271–2288. doi: 10.5194/cp-18-2271-2022

Smith, M., De Deckker, P., Rogers, J., Brocks, J., Hope, J., Schmidt, S., ... Schouten, S. (2013). Comparison of U37K′, TEX86H and LDI temperature proxies for reconstruction of south-east Australian ocean temperatures. *Organic Geochemistry*, *64*, 94–104. doi: https://doi.org/10.1016/j.orggeochem.2013.08.015

Tang, W., Ward, B. B., Beman, M., Bristow, L., Clark, D., Fawcett, S., ... Zhang, Y. (2023). Database of nitrification and nitrifiers in the global ocean. *Earth System*

Science Data, *15*(11), 5039–5077. doi: 10.5194/essd-15-5039-2023

Tierney, J. E., & Tingley, M. P. (2014). A Bayesian, spatially-varying calibration model for the TEX86 proxy. *Geochimica et Cosmochimica Acta*, *127*, 83–106. doi: 10.1016/j.gca.2013.11.026

Tierney, J. E., & Tingley, M. P. (2015). A TEX 86 surface sediment database and extended Bayesian calibration. *Scientific Data*, *2*(1), 1–10.

Tierney, J. E., Ummenhofer, C. C., & DeMenocal, P. B. (2015). Past and future rainfall in the Horn of Africa. *Science Advances*, *1*(9), e1500682. doi: 10.1126/sciadv.1500682

Trommer, G., Siccha, M., van der Meer, M. T. J., Schouten, S., Sinninghe Damsté, J. S., Schulz, H., ... Kucera, M. (2009). Distribution of Crenarchaeota tetraether membrane lipids in surface sediments from the Red Sea. *Organic Geochemistry*, *40*(6), 724–731. doi: 10.1016/j.orggeochem.2009.03.001

Varma, D., Hopmans, E. C., van Kemenade, Z. R., Kusch, S., Berg, S., Bale, N. J., ... Schouten, S. (2024). Evaluating isoprenoidal hydroxylated GDGT-based temperature proxies in surface sediments from the global ocean. *Geochimica et Cosmochimica Acta*, *370*, 113–127. doi: 10.1016/j.gca.2023.12.019

Varma, D., Hopmans, E. C., van Kemenda, Z. R., Kusch, S., Berg, S., Bale, N. J., ... Schouten, S. (2024). *OHGDGT global surface sediment data.* [Dataset]. PANGAEA. doi: 10.1594/PANGAEA.964885

Verleye, T. J. (2011). *The late Quaternary palaeoenvironmental changes along the western South-American continental slope: A reconstruction based on dinoflagellate cysts and TEX86* (PhD Thesis, Ghent University). Retrieved from `https://www.vliz.be/en/imis?module=ref&refid=210274`

Wei, B., Jia, G., Hefter, J., Kang, M., Park, E., Wang, S., & Mollenhauer, G. (2020).

Comparison of the UK'_{37}, LDI, TEX^{H}_{86}, and RI-OH temperature proxies in sediments from the northern shelf of the South China Sea. *Biogeosciences*, *17*(17), 4489–4508. doi: 10.5194/bg-17-4489-2020

Wei, Y., Wang, J., Liu, J., Dong, L., Li, L., Wang, H., ... Zhang, C. L. (2011). Spatial Variations in Archaeal Lipids of Surface Water and Core-Top Sediments in the South China Sea and Their Implications for Paleoclimate Studies. *Applied and Environmental Microbiology*, *77*(21), 7479–7489. doi: 10.1128/aem.00580-11

Wu, W., Tan, W., Zhou, L., Yang, H., & Xu, Y. (2012, jul). Sea surface temperature variability in southern Okinawa Trough during last 2700 years. *Geophysical Research Letters*, *39*(14). doi: https://doi.org/10.1029/2012GL052749

Yang, Y., Gao, C., Dang, X., Ruan, X., Lü, X., Xie, S., ... Yang, H. (2018). Assessing hydroxylated isoprenoid GDGTs as a paleothermometer for the tropical South China Sea. *Organic Geochemistry*, *115*, 156–165. doi: 10.1016/j.orggeochem.2017.10.014

Zell, C., Kim, J.-H., Hollander, D., Lorenzoni, L., Baker, P., Silva, C. G., ... Sinninghe Damsté, J. S. (2014). Sources and distributions of branched and isoprenoid tetraether lipids on the Amazon shelf and fan: Implications for the use of GDGT-based proxies in marine sediments. *Geochimica et Cosmochimica Acta*, *139*, 293–312. Retrieved from `http://www.sciencedirect.com/science/article/pii/S0016703714002968` doi: https://doi.org/10.1016/j.gca.2014.04.038

Zhou, H., Hu, J., Spiro, B., Peng, P., & Tang, J. (2014). Glycerol dialkyl glycerol tetraethers in surficial coastal and open marine sediments around China: Indicators of sea surface temperature and effects of their sources. *Palaeogeography, Palaeoclimatology, Palaeoecology*, *395*, 114–121. Retrieved from `https://www.sciencedirect.com/science/article/pii/S0031018213005361` doi: https://doi.org/10.1016/

j.palaeo.2013.12.006

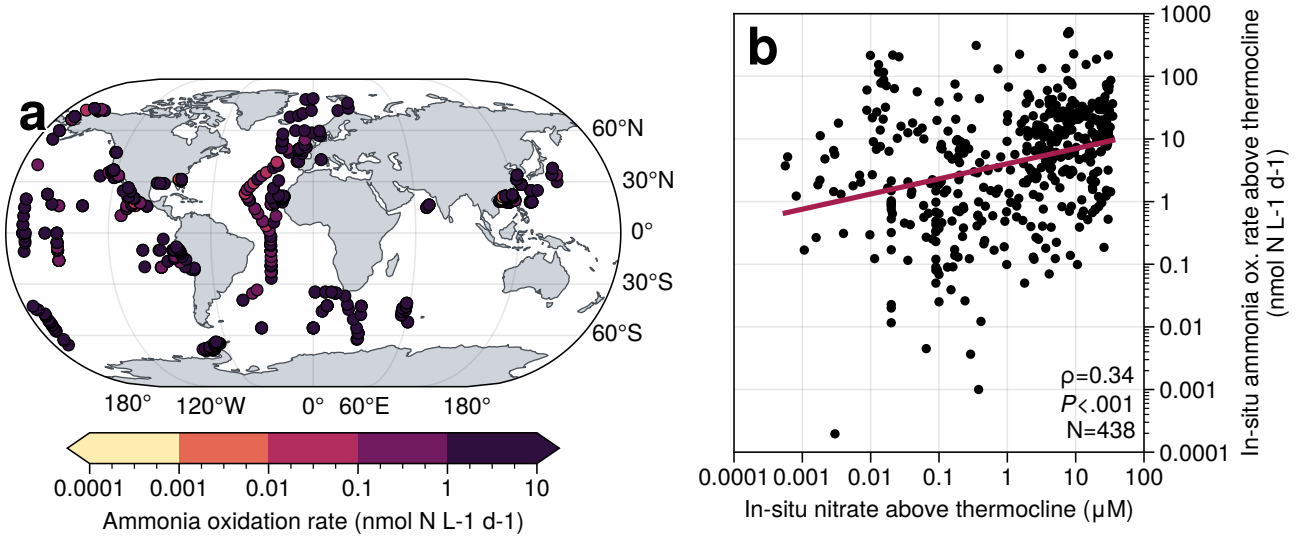

Figure S1. Ocean surface nitrate concentrations correlate with ammonia oxidation rates. (a) Spatial distribution of gridded ammonia oxidation rates above the thermocline. (b) Relationship between ammonia oxidation rates and nitrate concentrations. Measurements of ammonia oxidation rates and bioavailable nitrogen are co-located. Data were obtained from the global nitrification database (Tang et al., 2023).

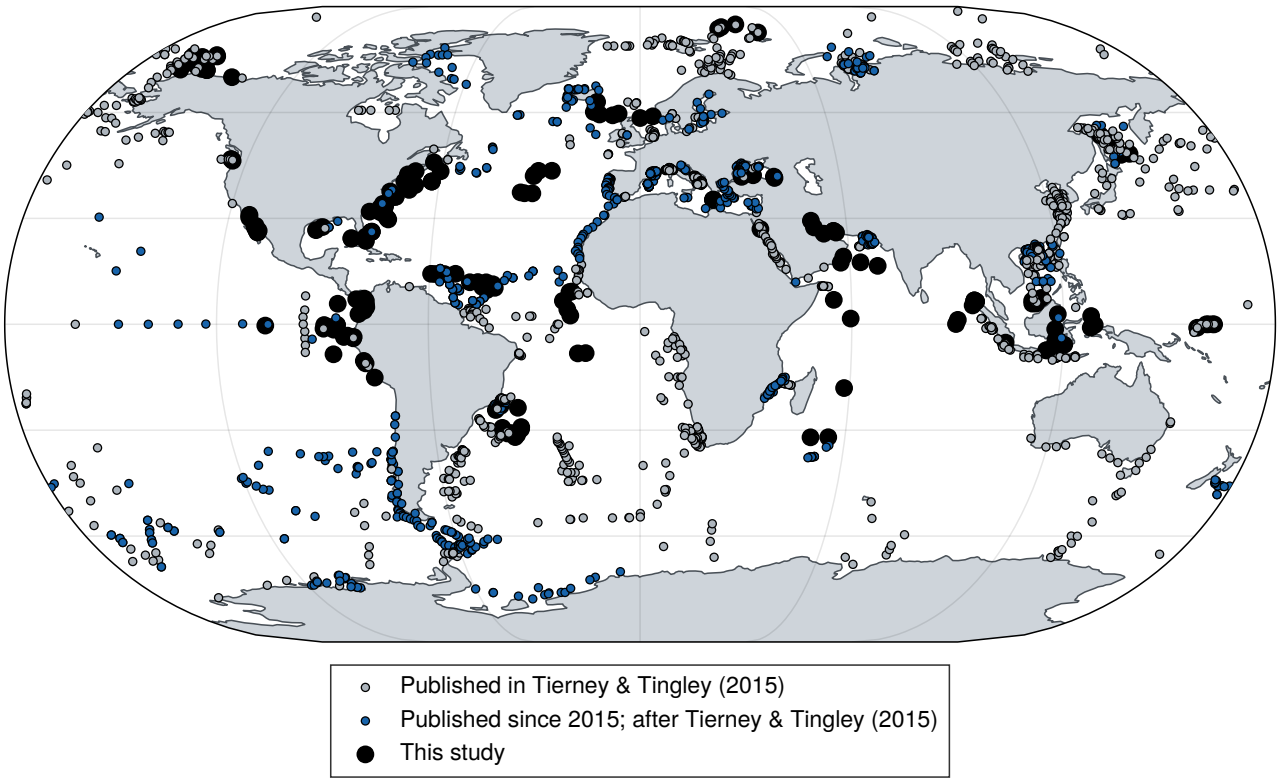

Figure S2. The distribution of an extended global core-top TEX_{86} dataset. Data published in Tierney and Tingley (2015) are plotted in grey. Additional published datasets since 2015 are plotted in blue. New GDGT measurements from this study are plotted in black.

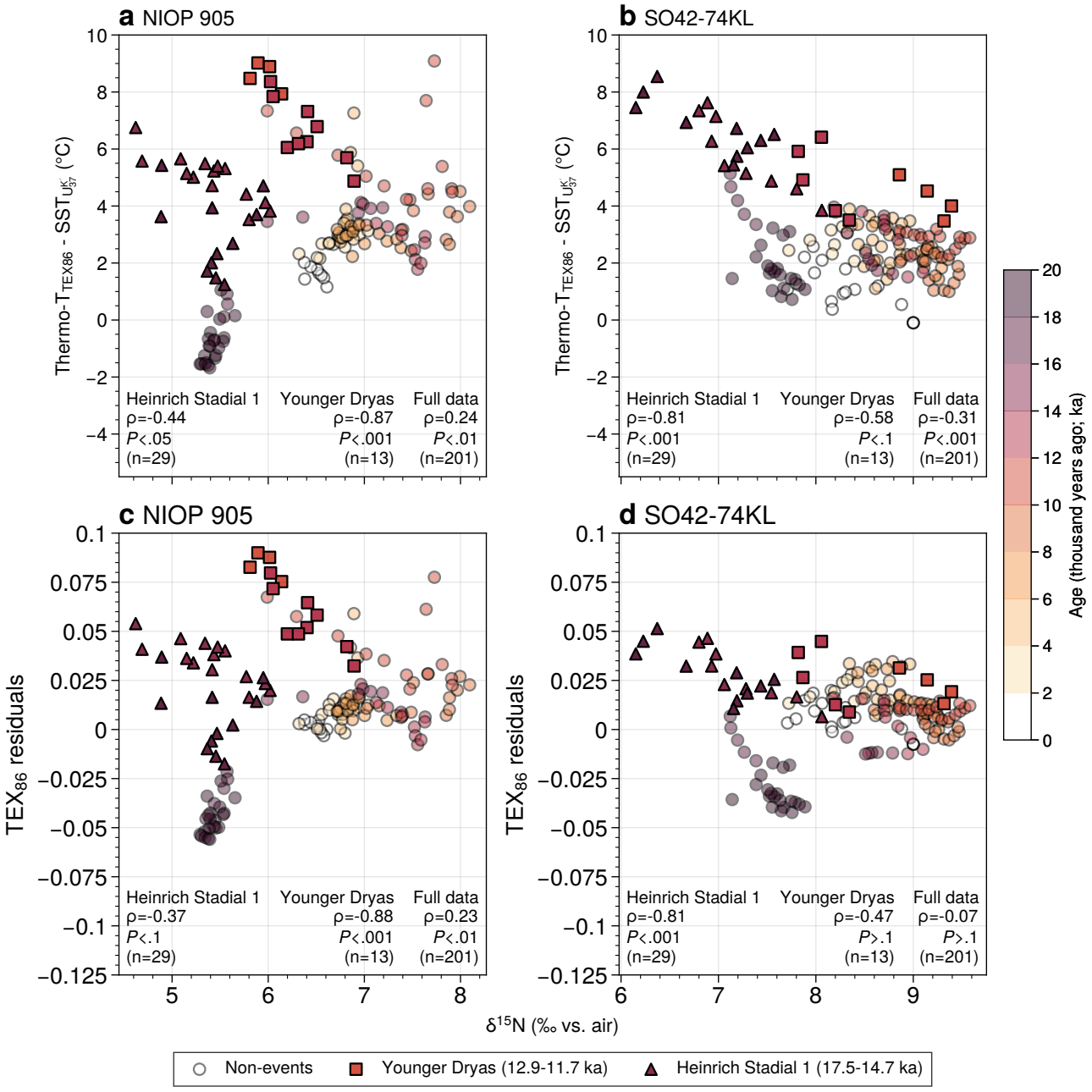

Figure S3. TEX$_{86}$ warming anomalies correlate with bulk sediment δ^{15}N. Interpolated paleo-records from core sites (left) NIOP905 and (right) SO42-74KL, with a 100-year timestep calculated from the original records shown in **Figures 4B–C**. (a, b) TEX$_{86}$ warming anomalies (Thermo-T$_{TEX_{86}}$ - SST$_{U^{K'}_{37}}$) correlate negatively with bulk sediment δ^{15}N, with stronger correlations observed during the Younger Dryas and Heinrich Stadial 1 events. (c, d) TEX$_{86}$ residuals respond to varying levels of bulk sediment δ^{15}N similarly to TEX$_{86}$ warming anomalies.

Table S1. Summary of coretop GDGT data sources

Remark	Reference	Count
Data from original source	Rattanasriampaipong et al. (2025) (this study)	190
	Ceccopieri et al. (2018)	53
	J. Chen et al. (2018)	28
	Hagemann et al. (2023)	21
	Harning et al. (2019)	12
	Harning et al. (2023)	12
	Kusch et al. (2016)	24
	Liu et al. (2014)	12
	Richey and Tierney (2016)	3
	Rodrigo-Gámiz et al. (2015)*	10
	Schukies (2018)	10
	Tierney and Tingley (2015)	26
	Tierney et al. (2015)	1
	Varma et al. (2024)	224
	B. Wei et al. (2020)	23
Data published in Tierney and Tingley (2014, 2015)	Castañeda et al. (2010)*	1
	Chazen (2011)*	4
	W. Chen et al. (2014)	36
	Fallet et al. (2012)	10
	Hernández-Sánchez (2014)	7
	Ho et al. (2011)	20
	Ho et al. (2014)	161
	Hu et al. (2012)	7
	Jia et al. (2012)	32
	Kaiser et al. (2014)	29
	Kim et al. (2008)	238
	Kim et al. (2010)	158
	Leider et al. (2010)	46
	Lengger et al. (2014)	10
	Lü et al. (2014)	58
	Nieto-Moreno et al. (2013)*	2
	Park et al. (2014)	54
	Richey et al. (2011)*	1
	Seki et al. (2009)*	1
	Seki et al. (2014)	58
	Shevenell et al. (2011)*	8
	Smith et al. (2013)*	14
	Trommer et al. (2009)	20
	Verleye (2011)*	1
	Y. Wei et al. (2011)	11
	Wu et al. (2012)	1
	Zell et al. (2014)	16
	Zhou et al. (2014)	27
Data retrieved from Rattanasriampaipong et al. (2022)	Kim et al. (2015)	146
	Kim et al. (2016)	31
	Pan et al. (2016)	13
Data retrieved from Hagemann et al. (2023)	Jaeschke et al. (2017)	52
	Kaiser et al. (2015)	23
	Lamping et al. (2021)	66
Data retrieved from Varma et al. (2024)	Yang et al. (2018)	23
Reanalyzed samples by Varma et al. (2024)	Bale et al. (2013)	6
	Lo et al. (2018)	12
	Sinninghe Damsté (2016)	39
	Sinninghe Damsté et al. (2022)	13
	Total	2014

* Only reported TEX_{86} values are available.