Supplementary Information

Meridional changes in the South Atlantic Subtropical Gyre during Heinrich Stadials

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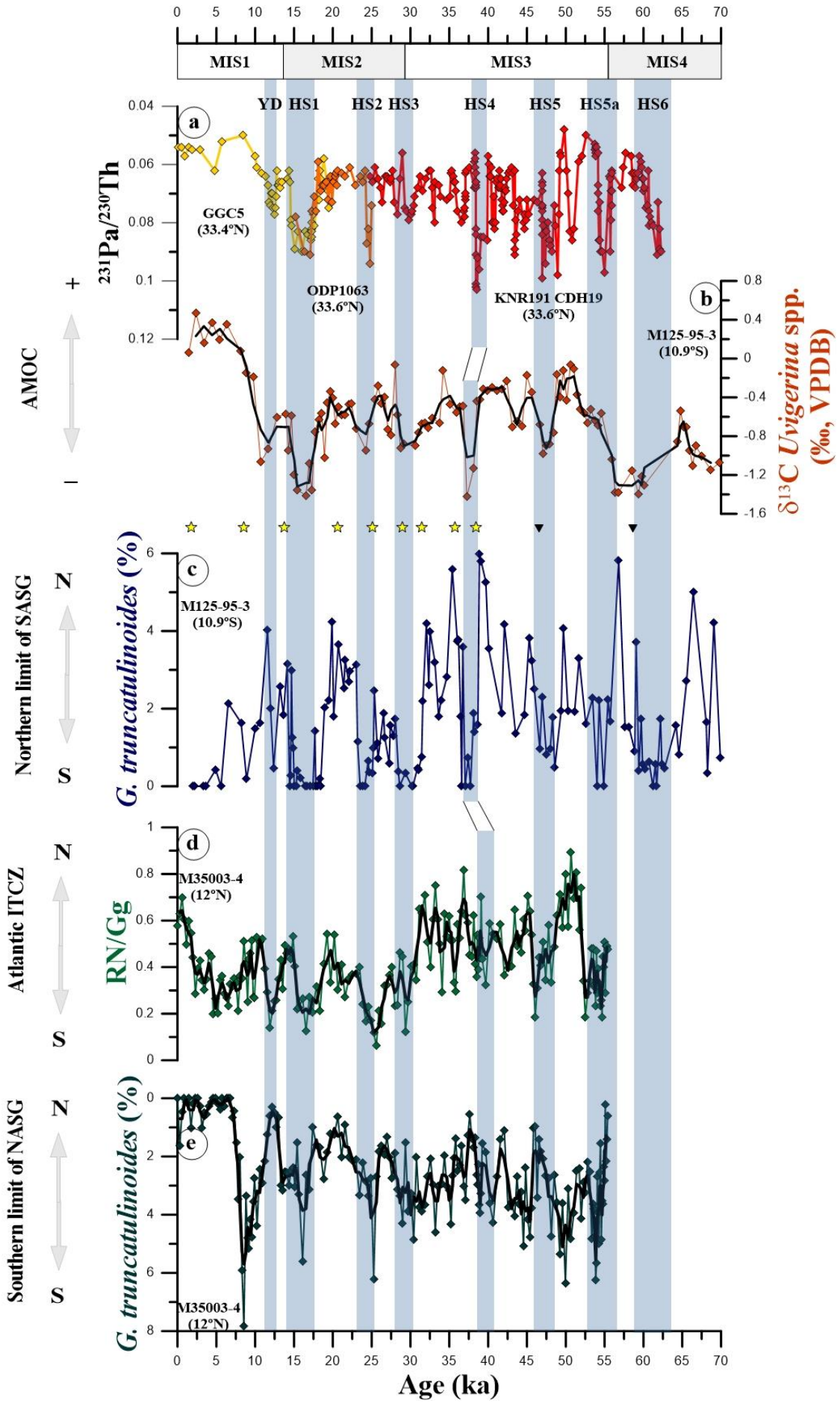
Figure S1:


MIS1
MIS2
MIS3
MIS4
YD
HS1
HS2
HS3
HS4
HS5
HS5a
HS6
a
b
c
d
e
GGC5 (33.4°N)
ODP1063 (33.6°N)
KNR191 CDH19 (33.6°N)
M125-95-3 (10.9°S)
M35003-4 (12°N)
231Pa/230Th
δ13C Uvigerina spp. (‰, VPDB)
G. truncatulinoides (%)
RN/Gg
AMOC
Northern limit of SASG
Atlantic ITCZ
Southern limit of NASG
Age (ka)

Supplementary Figure Captions

Figure S1. Relationship between the Atlantic Intertropical Convergence Zone and northern limit of the South Atlantic Subtropical Gyre (nSASG). **(a)** Bermuda Rise $^{231}Pa/^{230}Th$[1–3]; **(b)** $\delta^{13}C$ *Uvigerina* spp. from the study site[4] **(c)** Relative abundance of *Globorotalia truncatulinoides* from core M125-95-3; **(d)** %*Neogloboquadrina*/(%*Neogloboquadrina* + %*G. glutinata*) (RN/Gg) ratio as a proxy for the position of the Atlantic ITCZ in the Tobago Basin core M35003–4[5]; **(e)** Relative abundance of *Globorotalia truncatulinoides* from core M35003-4 (Tobago Basin)[6]. Yellow stars on top of panel "c" depict calibrated radiocarbon ages and black triangles depict tie-points used to produce the age model of core M125-95-3 (2σ standard error smaller than symbol size)[7]. Blue vertical bars represent millennial-scale Heinrich Stadials (HS) 6-1 and the Younger Dryas (YD). Marine Isotope Stages (MIS) are depicted below the upper horizontal axis. Atlantic Meridional Overturning Circulation (AMOC), Intertropical Convergence Zone (ITCZ), North Atlantic Subtropical Gyre (NASG), South Atlantic Subtropical Gyre (SASG).

Supplemantary References

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4. Campos, M. C. *et al.* Constraining Millennial-Scale Changes in Northern Component Water Ventilation in the Western Tropical South Atlantic. *Paleoceanogr. Paleoclimatology* **35**, 1–32 (2020).
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6. Hüls, M., & Zahn, R. Millennial-scale sea surface temperature variability in the western tropical North Atlantic from planktonic foraminiferal census counts. *Paleoceanography* **15**, 659–678 (200AD).
7. Campos, M. C. *et al.* A new mechanism for millennial scale positive precipitation anomalies over tropical South America. *Quat. Sci. Rev.* **225**, (2019).