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Ocean control on sea ice in the Nordic Seas

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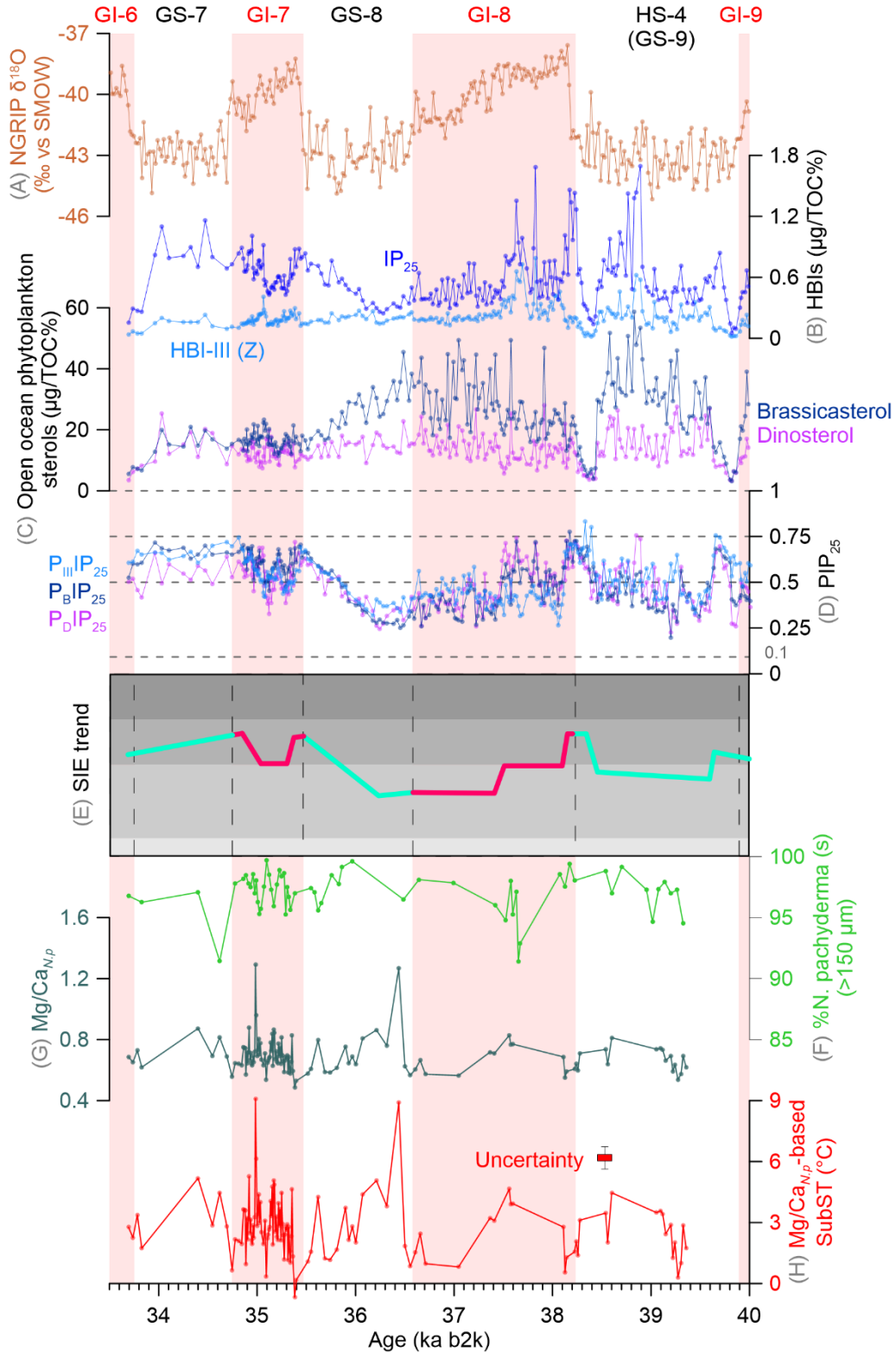
GI-6
GS-7
GI-7
GS-8
GI-8
HS-4
(GS-9)
GI-9
(A) NGRIP δ18O (‰ vs SMOW)
-37
-40
-43
-46
IP25
HBI-III (Z)
(B) HBIs (µg/TOC%)
1.8
1.2
0.6
0
(C) Open ocean phytoplankton sterols (µg/TOC%)
60
40
20
0
Brassicasterol
Dinosterol
PIIIIP25
PBIP25
PDIP25
(D) PIP25
1
0.75
0.5
0.25
0.1
0
(E) SIE trend
(F) %N. pachyderma (s) (>150 µm)
100
95
90
85
(G) Mg/CaN.p
1.6
1.2
0.8
0.4
Uncertainty
(H) Mg/CaN.p-based SubST (°C)
9
6
3
0
34
35
36
37
38
39
40
Age (ka b2k)

Figure S1. Biomarker and foraminiferal results from MD99-2304 with NGRIP $\delta^{18}O$ as a reference. (A) NGRIP $\delta^{18}O$ (‰ vs SMOW) (GIC05 age model) (North Greenland Ice Core Project members, 2004; Andersen et al., 2006), (B) IP_{25} and HBI-III (Z), (C) brassicasterol and dinosterol, (D) PIP_{25}, (E) sea ice extent (SIE) trend based on PIP_{25} indices, (F) relative abundance (%) of Neogloboquadrina pachyderma (sinistral) (>150 μm), (G) Mg/Ca ratio in N. pachyderma, and (H) subsurface temperature (SubST) reconstruction from $Mg/Ca_{N.p}$, with uncertainty range (±0.32°C) following Elderfield and Ganssen (2000). Relative abundance of N. pachyderma (s) is shown only for samples containing more than 100 planktonic foraminifera. These records are expressed in terms of ka 2bk. The pink bars mark GIs as defined in the NGRIP ice core (Rasmussen et al., 2014). The horizontal dashed lines in panel (D) and the grey boxes in panel (E) relate to different sea ice conditions (0.75–1 extensive sea ice, 0.5–0.75 seasonal ice / stable ice edge, 0.1–0.5 limited but variable ice, 0–0.1 ice-free) (Xiao et al., 2015; Stein et al., 2017).