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Supplement of

Optimal site selection for a high resolution ice core record in East Antarctica

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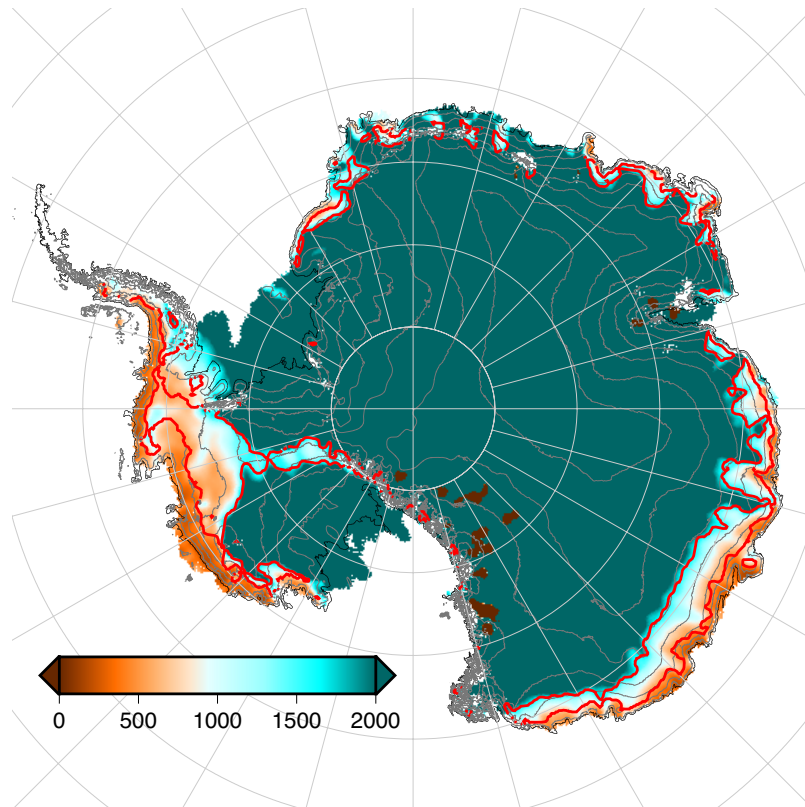


Figure S1.

Assessing continental Antarctica for areas that show potential for high resolution ice core sites. The colour bar shows ice age at 300 m depth using the annual average (1979-2012) surface mass balance data from RACMO2.1/ANT (Lenaerts et al., 2012). The mass balance data was converted to ice equivalent depth (ice density of 917 kg m^{-3} and a Nye vertical strain rate profile (Nye1963) based on the BEDMAP2 ice thickness compilation (Fretwell et al., 2013) was applied. A red boundary shows regions that have an ice age of >500 years at 300 m depth, receive $>200 \text{ mm y}^{-1}$ IE and are above the 1000 m contour.

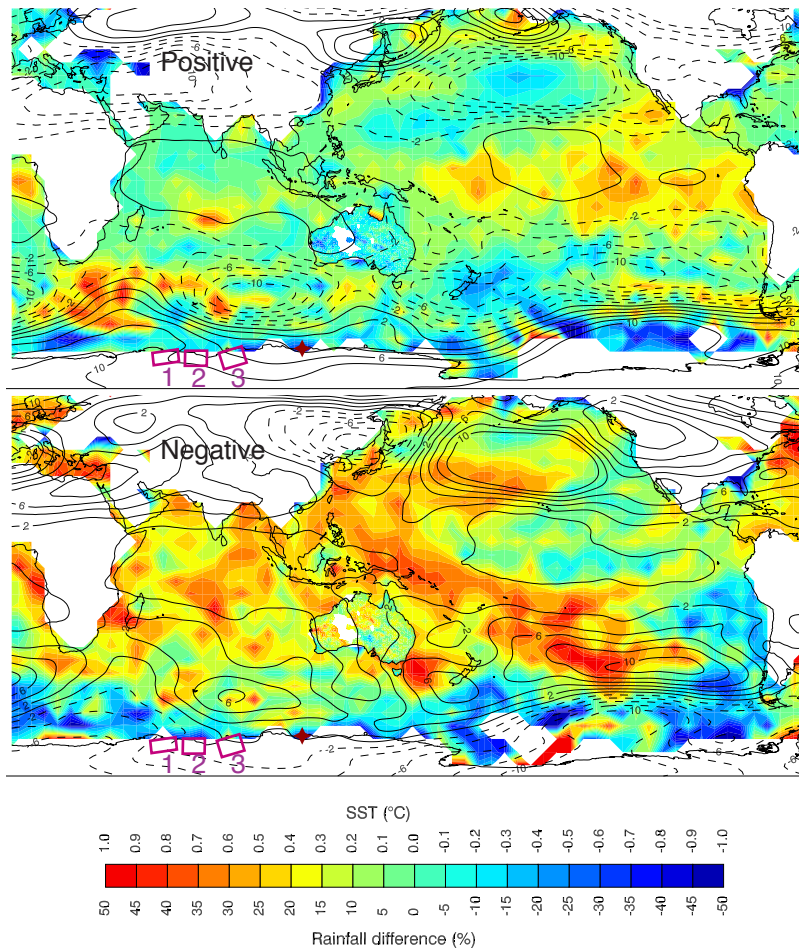


Figure S2.

Sea surface temperature, 500 metre geopotential height and Australian rainfall correlation analysis with the IPO during the warm season (November-March) for positive (top) and negative (bottom) IPO years over the ERA-Interim period of 1979-2014. Positive and negative years were defined as for Figure 7 (0.5 std deviation above or below average). Note the colourbar defines a rainfall increase over Australia, as well as warm SSTs, as the red spectrum (conversely, a rainfall decrease and cool SSTs are blue). The three regions identified in fuschia are regions shown in previous figures: 1 - Law Promontory/Enderby Land, 2 - Cape Darnley and 3 - Mt Brown. Law Dome is shown as a red star on the coast to the east of the three possible sites.