Supplementary Information for

Decadal-scale onset and termination of Antarctic ice-mass loss during the last deglaciation

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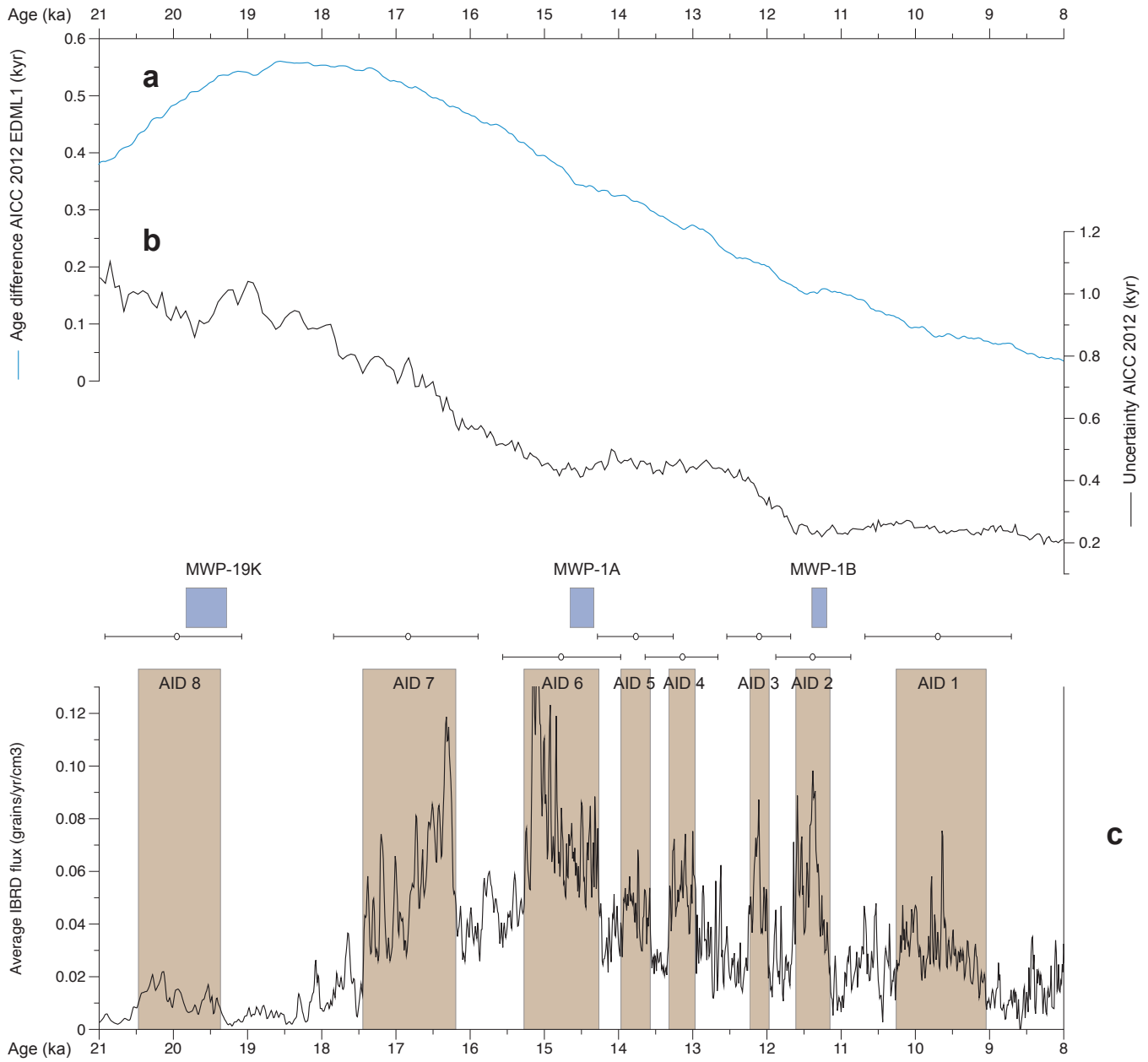
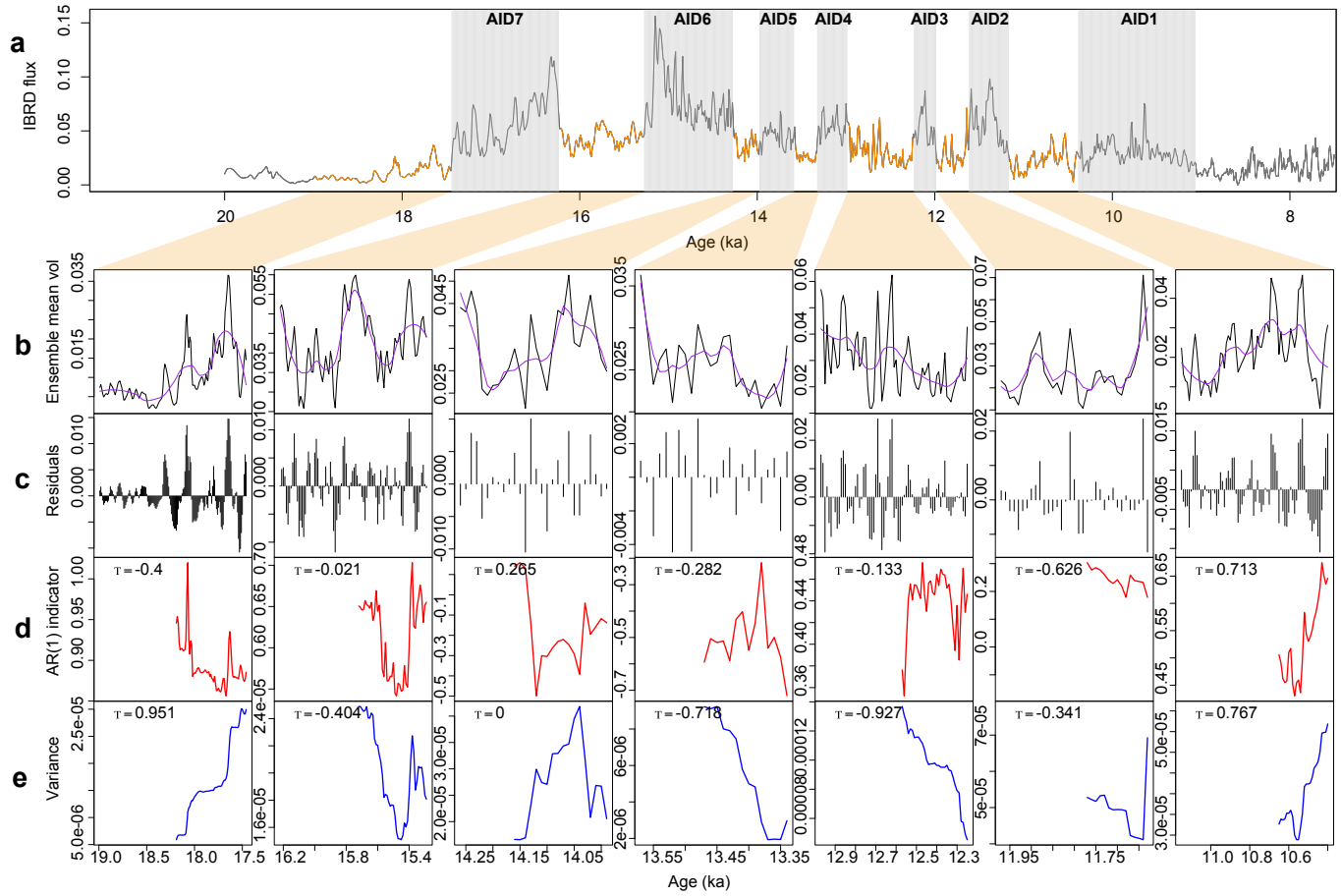
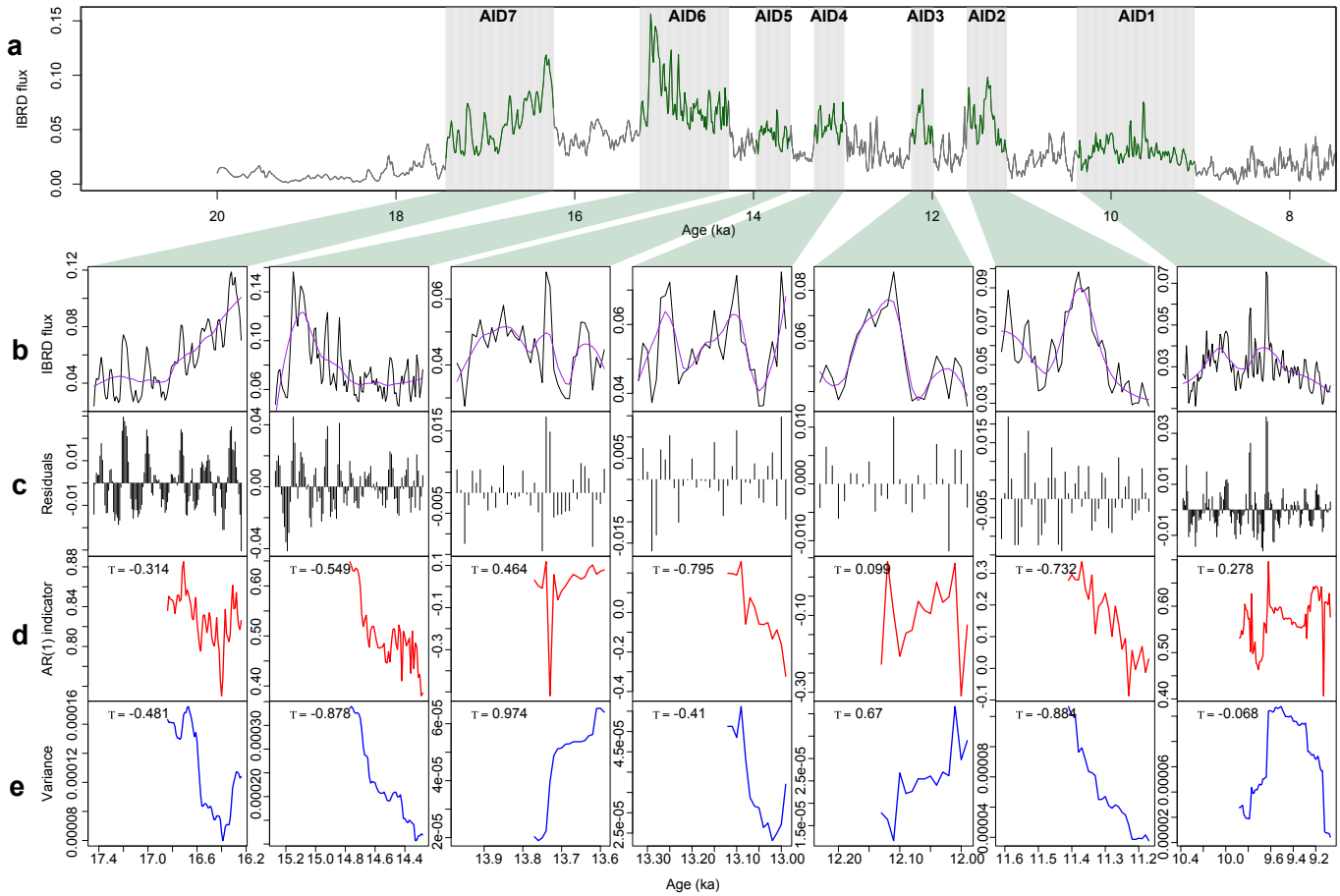


Supplementary Fig. 1. Uncertainties of AID events on the AICC2012 age model. a Age difference between the EDML1 (ref [1]) and AICC 2012 (ref [2, 3]) age scales. **b** Uncertainties of the AICC 2012 age scale. **c** AID events 1–8 (brown bars) on the AICC 2012 age scale with age uncertainties for the upper and lower bounds on top. Note that deglacial meltwater pulses (MWP, blue rectangles) 19K, 1A and 1B occurred, within uncertainties, during AID8, 6 and 2, respectively. Note that 8–18 ka is from[4] and 18–21 ka is added in this study to accommodate AID8.



Supplementary Fig. 2. Tipping point analysis from the Iceberg Alley IBRD stack for destabilization pathway. a Scotia Sea IBRD stack AID events (gray columns) on AICC 2012 chronology (ref [2, 3]), orange lines show data selected prior to each destabilization (AID) event. **b-e** Tipping point analysis for the data prior to destabilization, from top panel: loess detrending line (purple) from ensemble mean ice volume (black); data residuals (black); autocorrelation (red); and variance (blue), over a 50% sliding window, with Kendall Tau rank correlation coefficient labelled.



Supplementary Fig. 3. Tipping point analysis from the Iceberg Alley IBRD stack for re-stabilization pathway. a Scotia Sea IBRD stack with AID events (grey columns) on AICC 2012 chronology (ref [2, 3]), green lines show data selected during each AID event, prior to re-stabilization. **b-e** Tipping point analysis for the data prior to re-stabilization, from top panel: loess detrending line (purple) from ensemble mean ice volume (black); data residuals (black); autocorrelation (red); and variance (blue), over a 50% sliding window, with Kendall Tau rank correlation coefficient labelled.

Supplementary References

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4. Gomez N, Weber ME, Clark PU, Mitrovica JX, Han HK. Antarctic ice dynamics amplified by Northern Hemisphere sea-level forcing. *Nature* **587**, 600-604 (2020).