

Supplement of

**A comparison of pre-Millennium eruption (946 AD) and modern temperatures
from tree rings in the Changbai Mountain, northeast Asia**

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Supplementary figures

This document provides supporting figures for the main article.

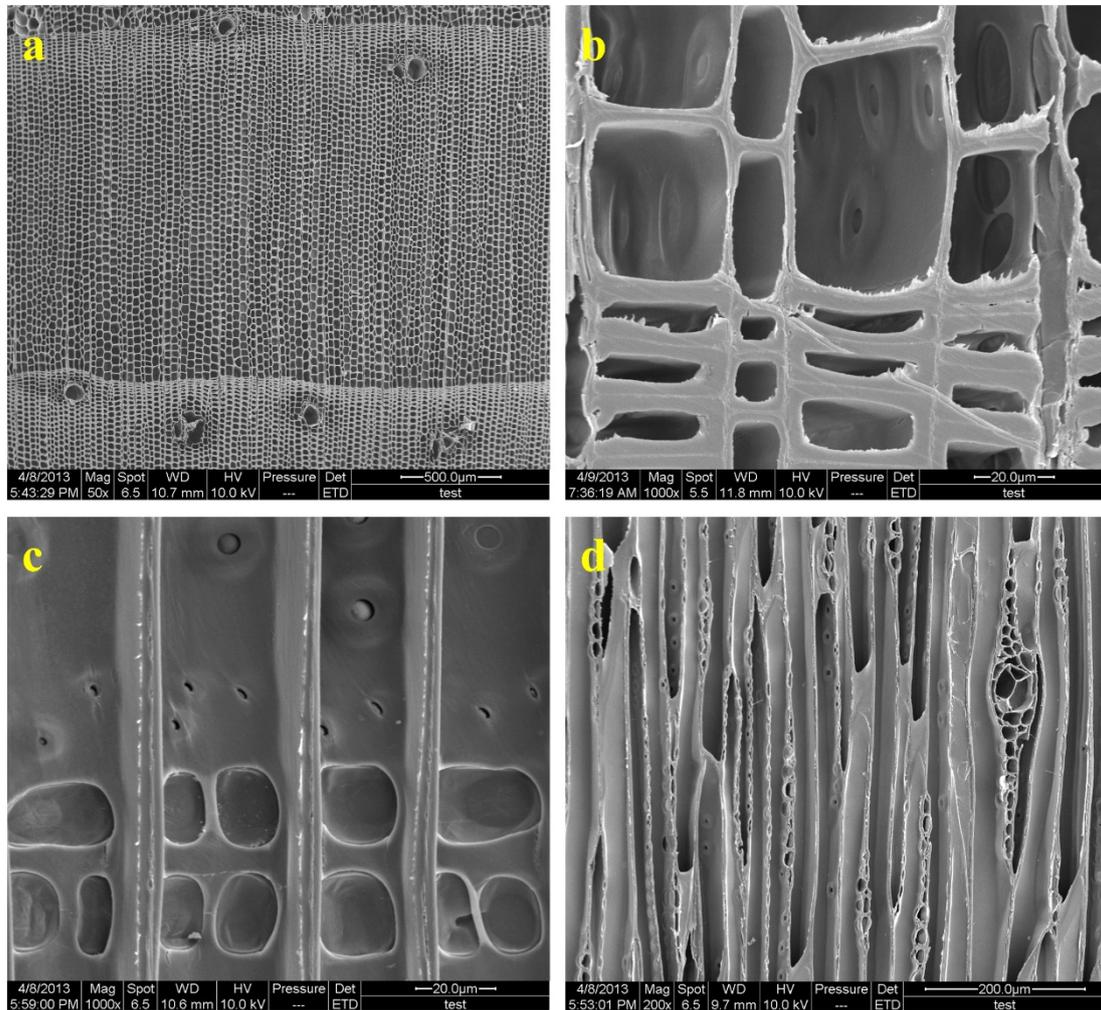


Figure S1. Wood anatomical features of carbonized logs shown on the cross-sectional plane (**a** and **b**), radial plane (**c**), and tangential plane (**d**).

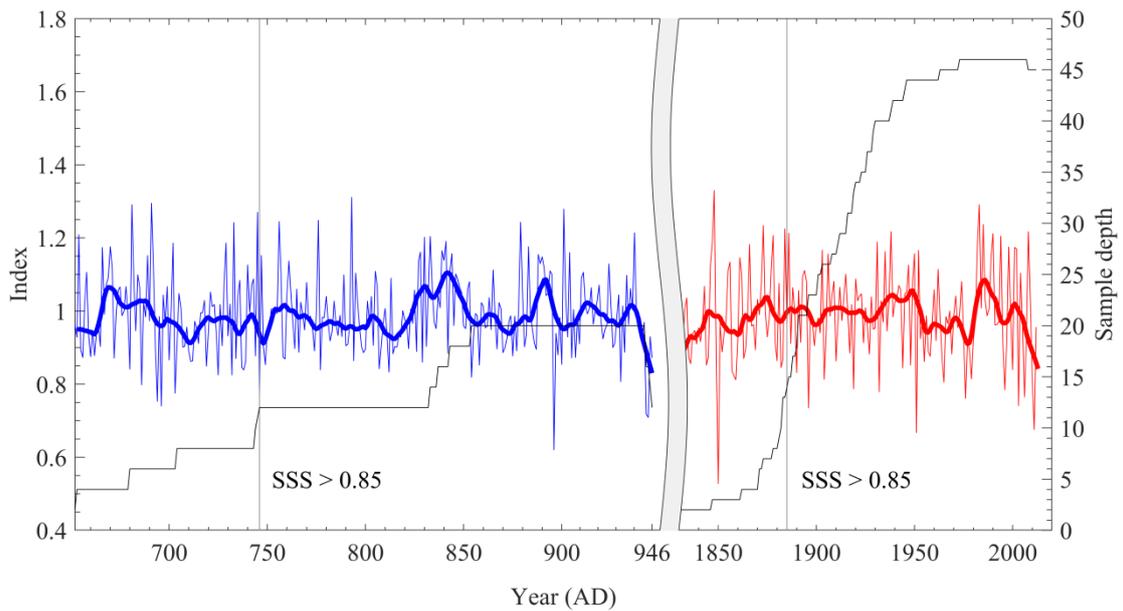


Figure S2. Residual (RES) chronologies of carbonized trees (blue line) and modern trees (red line). The carbonized tree chronology spanned 295 years (652-946 AD) prior to the Millennium Eruption. Modern trees spanned 183 years (1830-2012 AD). Both chronologies are shown with a 13-year moving average filter (heavy lines) and sample depth (right y-axis).

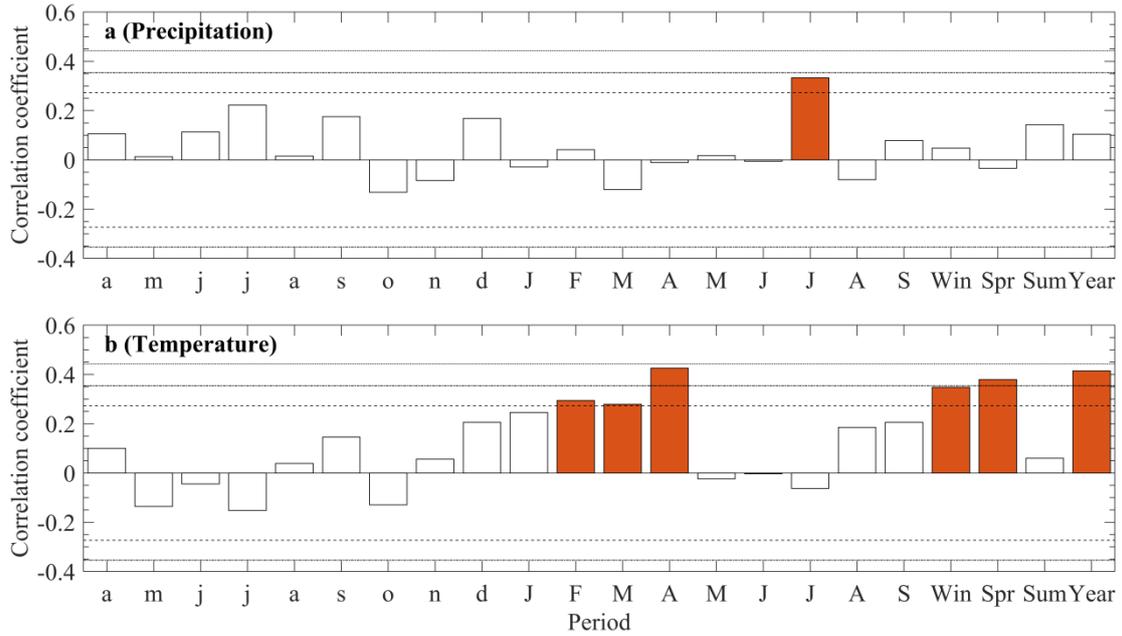


Figure S3. Pearson correlation coefficients between the STD tree-ring chronology and monthly, seasonal and annual (a) precipitation and (b) temperature during 1961-2012. Lowercase and uppercase letter on x axis indicate the months of the previous and current year, respectively. The horizontal dotted, dash-dotted, and dashed lines represent significance levels of 0.001, 0.01, and 0.05, respectively. Bars with significant correlation were filled with colour.

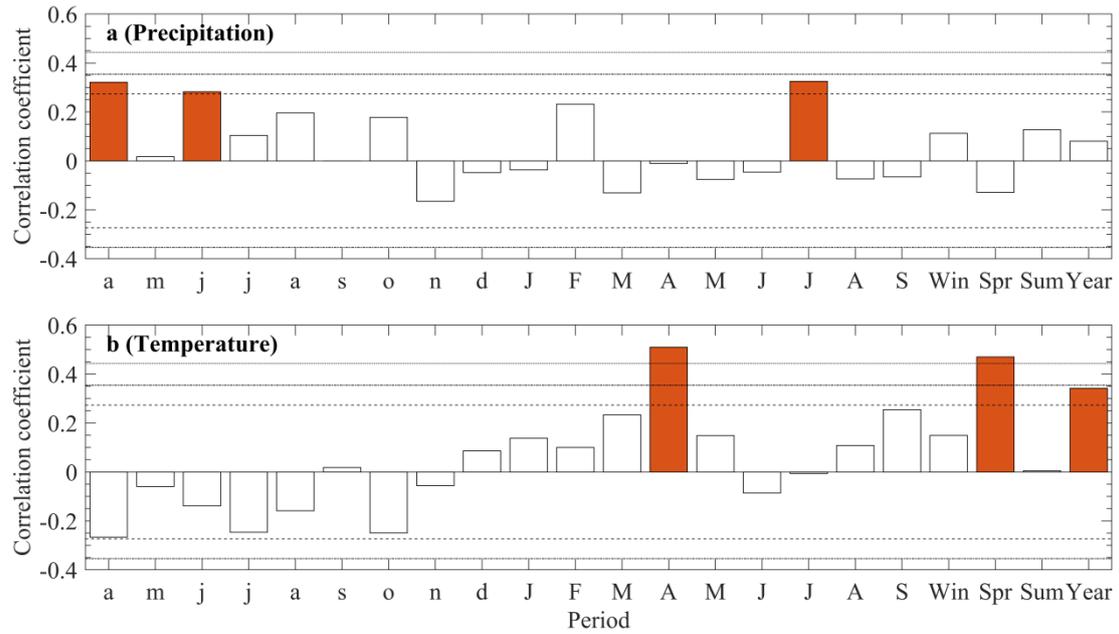


Figure S4. Pearson correlation coefficient between the first-order difference series of STD tree-ring chronology and monthly, seasonal and annual (a) precipitation and (b) temperature during 1961-2012. Lowercase and uppercase letter on x axis indicate the months of the previous and current year, respectively. The horizontal dotted, dash-dotted, and dashed lines represent significance levels of 0.001, 0.01, and 0.05, respectively. Bars with significant correlation were filled with colour.

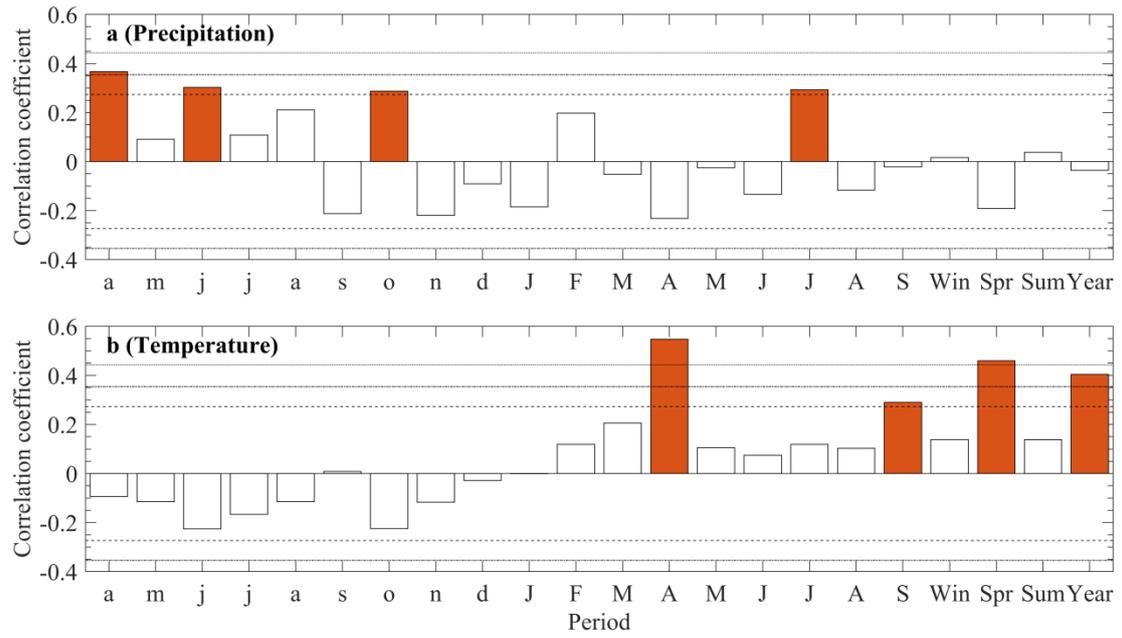


Figure S5. Same as **Figure S4**, but for the RES tree-ring chronology.

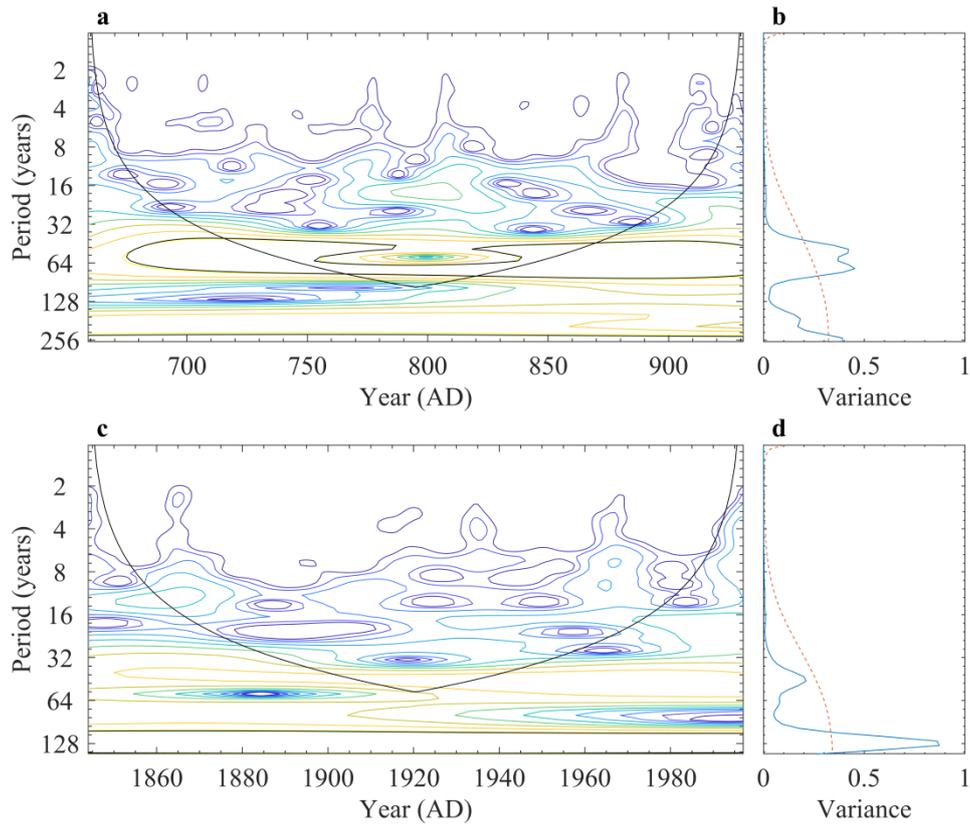


Figure S6. (a, c) Wavelet power spectrum of the 30-year moving standard deviations of reconstructed April temperature from (a) carbonized and (c) modern trees. The power has been scaled by the global wavelet spectrum. Black contour is the 95% confidence level using a red-noise (autoregressive lag1) background spectrum. (b, d) The global wavelet power spectrum (light blue line) for the 30-year moving standard deviations of (b) carbonized trees- and (d) modern trees-based temperature reconstructions. Dashed lines represent a significance level of 0.05.