

Supplementary Information for paper "The timing of the ca-660 BCE Miyake solar-proton event constrained to between 664 and 663 BCE" by *Panyushkina et al. 2024*.

Supplementary Note 1: Data

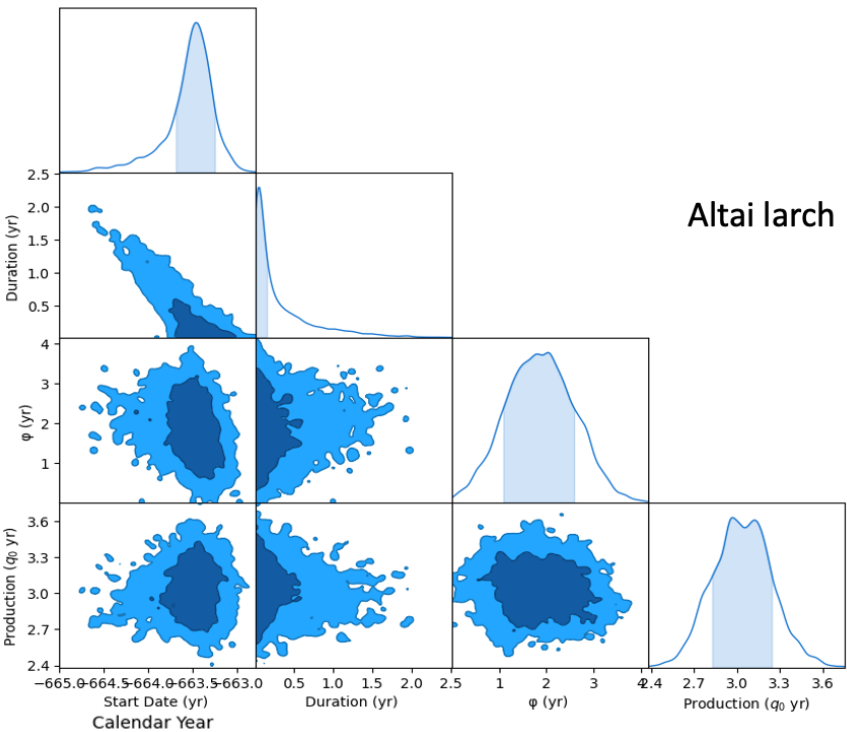
Supplementary Table 1. Summary of the ^{14}C dataset used in the study. The modeling span of the ^{14}C tree-ring series was aligned to the common interval 669–650 BCE (20 years).

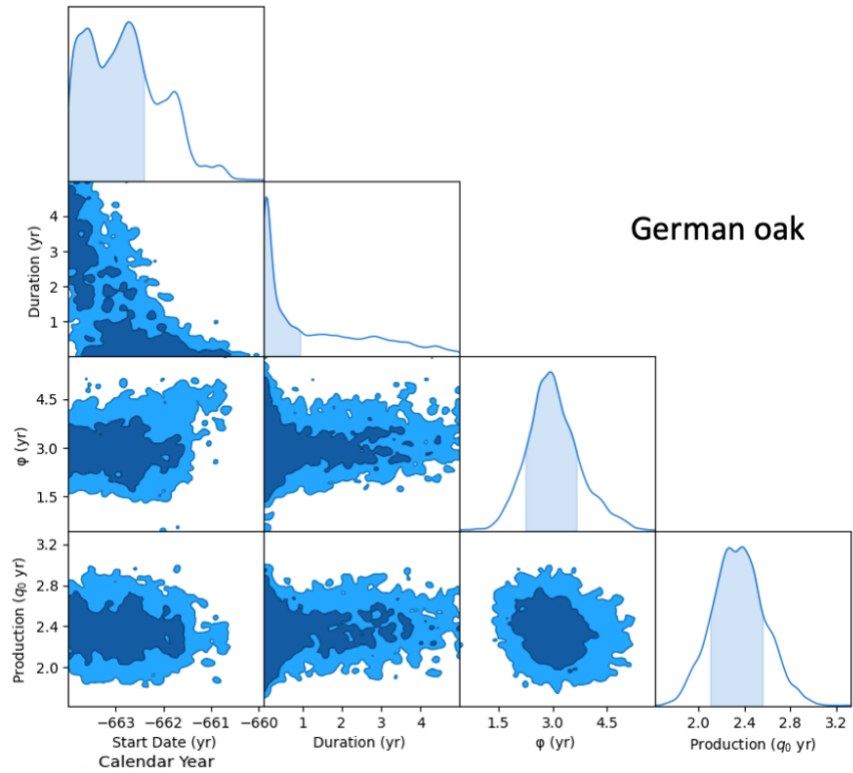
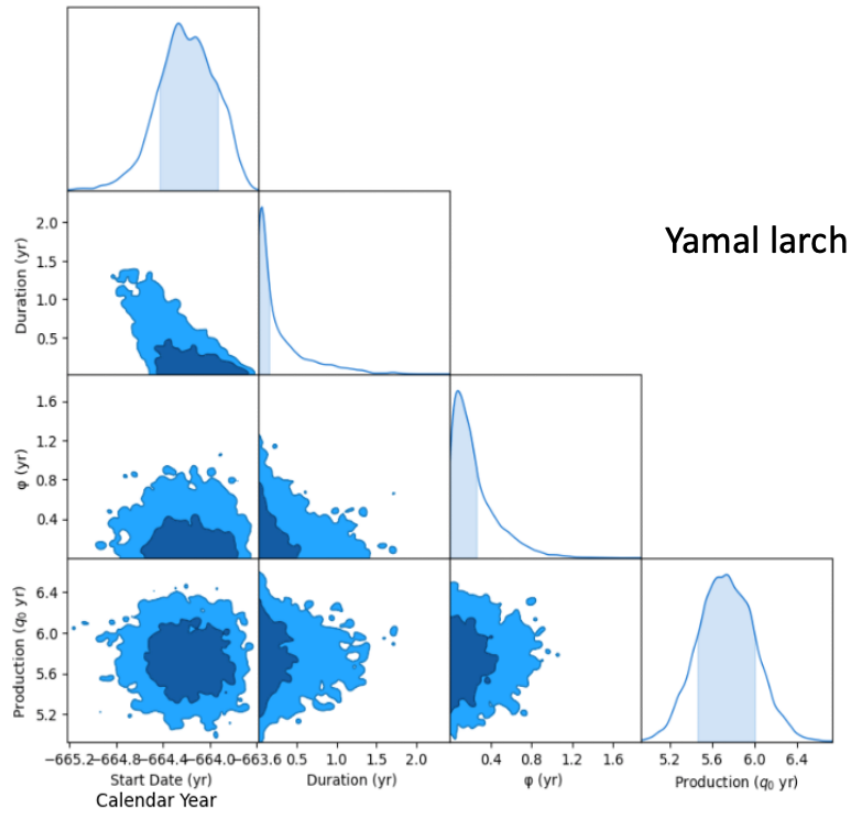
$\Delta^{14}\text{C}$ series	Region	Coordinates	Elevation, m asl	Wood source	Publication
Altai larch	Inner Eurasia	49.38 N, 89 E	2150	Archaeological timber	This paper
Yamal larch	Northern Eurasia	67.3 N, 70.7 E	20	Fluvial subfossil	This paper
Choukai cedar*	Pacific North Asia	39 N, 140 E	n/a	Volcanic deposits	Sakurai et al. [22]
German oak	Central Europe	50 N, 11 E	300	Fluvial subfossil	Park et al. [10]

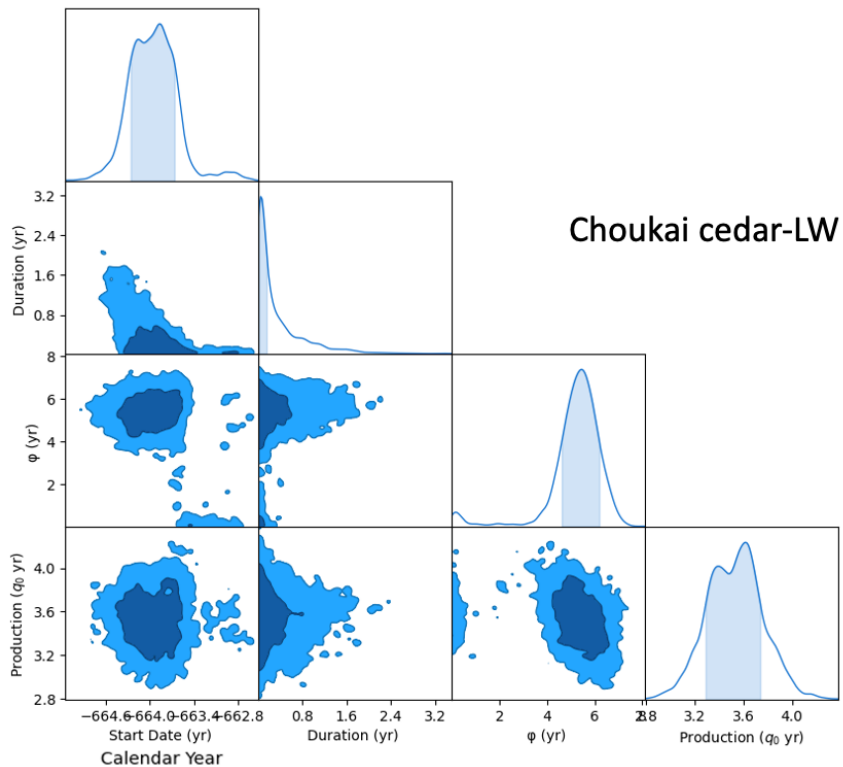
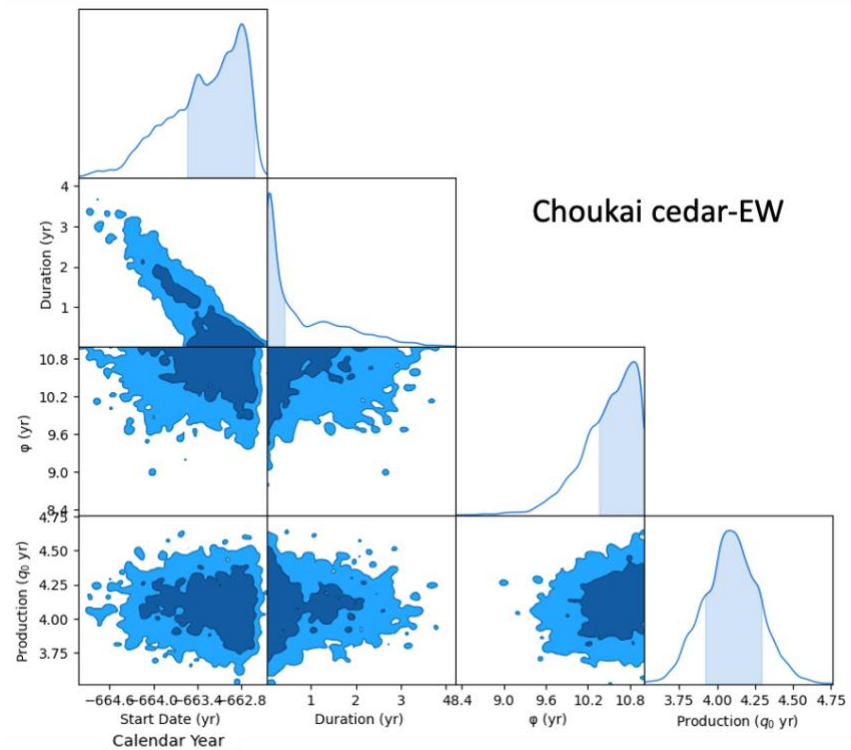
*Two subannual series from earlywood and latewood.

Supplementary Note 2: Results

Supplementary Figure 1: Cornerplots for posterior distribution of the ^{14}C spike-signal parameters (start date, duration, phase of 11-yr solar cycle, production rate) from the MCMC modeling (Hinton 2016). Two blue shades denote 1σ and 2σ of the marginalized posterior distributions for each modeled parameter. Altai larch and Yamal larch from this study; German oak from Park et al. 2017 [10], and Choukai cedar-EW and Choukai cedar-LW from Sakurai et al. 2020 [22]. Figure 1a and Methods Section in the main text provides more details about the delta ^{14}C time series and the calculations.







Supplemental reference

Hinton, S. R. ChainConsumer. The Journal of Open-Source Software 1, 00045, (2016).
<https://doi.org/10.21105/joss.00045>.