

In the years 775 and 994 AD, the Earth was struck by intense bursts of radiation from space, most likely as a result of enormous solar storms. The impacts caused the production of radiocarbon in the atmosphere to increase dramatically. The years of the events are precisely known because the uplifts in radiocarbon were detected in tree-rings of known growth year. Many more such tree-rings are now being tested to determine the regularity of the events, especially as a recurrence in modern times would be devastating for satellite and telecommunication systems. But the spikes in radiocarbon concentration also present a new opportunity for resolving the chronologies of ancient civilizations, such as the Maya and the Egyptians. ECHOES (Exact Chronology of Early Societies) is an ERC-funded project, which aims to discover the spikes in both known-age tree-rings and in archaeological artefacts, thus allowing the objects to be dated to the exact calendar year.

“Solar Storms, Tree Rings and Astrochronology: New Radiocarbon Research from Oxford”

Dr. Michael Dee

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Chair:

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Thursday, February 2, 2017

5:30 pm - 7:00 pm

CGIS South Room S250,
1730 Cambridge Street, Cambridge, MA

The Initiative for the Science of the Human Past at Harvard