

ARCHE Seminar Series 2023

Associate Professor Yan Zheng presents

“Magnetism and its application in the chronology and archaeology of China”

Australian Research Centre for Human Evolution Seminar Series.

Abstract: The Earth’s magnetic field is as indispensable to us like water and air. The magnetic field extends from Earth’s deep interior and into outer space, serving as a protective shelter from solar radiation. Paleomagnetic studies can tell us Earth’s history, and provide an estimate for the ages of rocks and sediments. The geomagnetic polarity time scale (GPTS) based on reversals is widely used for relative dating on rocks and sediments since Middle Jurassic. Paleolithic and Neolithic sites in the Quaternary and Holocene can be dated by geomagnetic excursions and secular variations, respectively.



Iron is the most common metallic element in the Earth’s crust and may exist in many kinds of minerals and therefore it can reflect different sedimentary environments. In Paleolithic sites, fired areas can be detected by magnetic enhancements, which resulted from transformation of paramagnetic minerals, such as iron-bearing silicate, into ferrimagnetic minerals, magnetite and/or maghematite. We can also estimate fire temperatures at archaeological sites. Magnetic methods can provide reliable ages for mammal localities and Paleolithic and Neolithic sites, allowing us to examine the co-evolution of humans and mammals as well as environmental changes.

Date/Time Wednesday 22nd November 2023 @ 1pm (double bill with A/Prof Westaway)

Room N76_1.04 Seminar Room (Nathan Campus)