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Archeomagnetic dating of an Iron Age kiln from Gird-i Bazar, Iraq

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Detailed knowledge on variations of the past geomagnetic field is fundamental for understanding the driving mechanism in the Earth's core. This knowledge can furthermore be used for dating of archeological artifacts. In this study, the wall of a kiln from Gird-i Bazar, Iraq, was sampled for the purpose of archeomagnetic dating. The site Gird-i Bazar is located on a shallow mound in the Peshdar Plain and was mainly occupied during the Iron Age. Archeomagnetic investigations comprise thermal and AF demagnetization, hysteresis measurements and archeointensity experiments based on a modified Coe variant of the Thellier technique. Results indicate that only the innermost part of the kiln wall is suitable for reliable geomagnetic field reconstructions. Preliminary high field intensity estimates ($\sim$87μT) could be associated with the regional Levantine Iron Age geomagnetic anomaly. This observation agrees well with results of radiocarbon dating of the occupation in Gird-i Bazar and the historical context indicating that the last firing of the kiln was carried out prior to the reign of Shalmaneser III (858-824 BC), when Gird-i Bazar was brought under Assyrian control. Archeomagnetic dating will be performed using reference curves derived from global and regional geomagnetic field models.