

Paleomagnetic study on baked earth from Izumo-Sugisawa ruins

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In Japanese archaeomagnetic direction study, there are few case examples reported with age till the establishment of Sue-wares (Sueki potteries) which were well baked under the anoxic condition in the closed kiln, because baked earths before Yayoi era were in an open atmosphere and in low temperature, and their chronology have large uncertainty.

Here we report paleomagnetic and rock magnetic results for samples obtained from red colored and bake earths two fire pits in a middle Yayoi era (around the begging of AD1C) constructions of Izumo-Sugisawa archaeological site. In the paleomagnetic results, the intensity of remanent magnetization was too low to detect in a spinner magnetometer then all measurements were conducted by a SQUID magnetometer. The natural remanent magnetization of these samples are still low and unstable in many specimens. We could obtain stable direction from a few specimens, and it is hard to extract the characteristic components.

From the results of saturated magnetization (J_s) with respect to the temperature in a vacuum condition show an alternation of magnetic minerals above 400C. This is a representative of insufficient heating

at that time of operation. On the other hand, one specimen which has a stable ChRM shows smaller discrepancy of J_s between heating and cooling process, so that the place where this specimen was sampled is likely the most baked part in the pit.

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