

Hand axes in Europe nearly a million years old: study

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Early humans used two-sided stone axes in Europe up to 900,000 years ago, far earlier than previously thought, according to a study released Wednesday.

The transition from primitive chopper-like tools to more finely crafted double-faced axes marked a milestone in the history of technology, and gave those whose wielded them an edge in the struggle to survive.

The revised dating of tools discovered in the 1970s at two sites in Spain largely erases a time gap that had long perplexed scientists.

Before the new study, the earliest double axes found in Europe were thought to date from only 500,000 years ago -- fully a million years after they had come into use in Africa.

It seemed unlikely that populations on the European continent, originating from Africa, could have lagged so far behind on such a key development.

Gary Scott and Luis Gibert of the Berkeley Geochronology Center in Berkeley, California applied a technique called magnetostratigraphy to determine that the hatchets were in fact crafted between 760,000 and 900,000 years ago.

Magnetostratigraphy is based on the periodic reversal of Earth's magnetic field.

Acting like tiny compasses, fine-grained magnetic minerals in the tools contain a record of the polarity at the time they were used. Once buried in sediment, the polarity is preserved.

"The age (of the axes) must be Early Pleistocene, the most recent period dominated by reverse polarity, 1.78-to-0.78 million years ago," the researchers concluded.

The new dating suggests that early man was present in southwestern Europe for much of this period, and that the barrier between Africa and Europe was more permeable than once thought, they said.

The two archeological sites, both in southern Spain, are La Solana del Zamborino, and Estrecho del Quipar.

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