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News & Comments

Signatures of the Earliest Human-Tamed Fire Detected

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A site in western Israel has been found to contain evidence of ancient humans using fire at least 800,000 years ago, according to a new study.

It has now been proven that historic artefacts recovered from Israel's Evron Quarry archaeological website in the mid-1970s had been altered by fire by analyzing superior computational models.

Mastering fire has great significance in human history as it changed the way early humans lived and opened new possibilities for them. But when exactly did this mastery occur? Researchers with the help of used AI detected hidden clues of campfires from a Lower Paleolithic site in Israel, dating back to around 1 million years past.

In the past, fire identification at archaeological sites was done by visual signs, for instance, reddening or discolouration of soil, and cracking or shrinking of materials. But in the current study, the use of a spectroscopic 'thermometer' enabled scientists to detect minute chemical changes analyzed by deep learning algorithms.

Several stone tools and pieces of tusk were found to have subtle chemical signatures, suggesting that they were heated to a variety of temperatures, some exceeding 400 degrees Celsius. Fire might have been involved in the heating process, suggest the AI thermometer.

To rule out the possibility of wildfires, the team explained that the tools and bones recovered from the site point to the controlling of the fire. The artefacts were found alongside animal fossils within yellow-grey sand that sat on top of red loam.

There are very few archaeological sites that had signs of early human artefacts alongside evidence of fire. More studies and examination of Lower Paleolithic sites are needed to both broaden and strengthen our understanding of the relationship between early humans and fire.

KEYWORDS

Evron Quarry, human-tamed fire, early fire, archaeological site, history, archaeology, ancient, artefacts, thermometer, Lower Paleolithic site, spectroscopic thermometer, AI