

# Using Pyrotechnology: Fire-related Features and Activities with a Focus on the African Middle Stone Age

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**Abstract** Pyrotechnology was important in prehistory and has been a research topic for decades, in particular, the origins of controlled and habitual use of fire. The earliest putative evidence of fire use is from the African sites of Swartkrans (1,500,000–1,000,000 years ago) and Koobi Fora (1,500,000 years ago). In contrast, researchers working with European sites debate whether habitual use of fire occurred before 400,000 years ago. This paper provides a brief introduction to early fire use and then focuses on the African Middle Stone Age. Published evidence on fire use is available for 34 sites in southern Africa. Combustion features yield much evidence about human behavior, not only in regard to technical skills but also concerning social activities. Several activities using fire, symbolic behavior, spatial structuring, and group size in the Middle Stone Age are inferred from bone and lithic data, ash discard, site maintenance, and hearth size. The current status of knowledge on Middle Stone Age pyrotechnology demonstrates the benefits of applying new methodological approaches, facilitates comparisons with earlier and later archaeological periods, and is an important reminder of the benefits of a multidisciplinary approach.

**Keywords** Southern Africa · Middle Stone Age · Pyrotechnology · Hearths

## Introduction

Pyrotechnology, the use of fire as a tool, was an important part of prehistoric life and has been a research topic for decades (e.g., Brain and Sillen 1988; Clark and Harris 1985; Goldberg et al. 2001; Gowlett 2006; Oakley 1961; Wrangham and

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