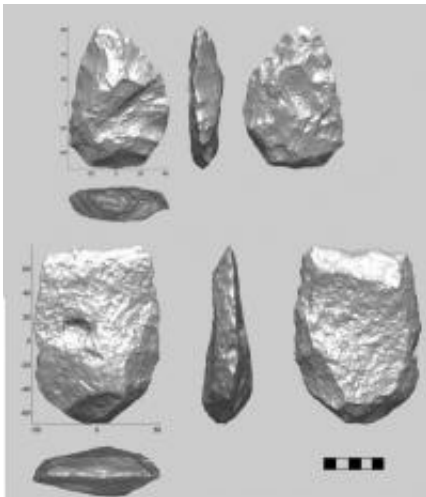


Modern behavior of early humans found half-million years earlier than previously thought

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These are stone tools discovered at the Gesher Benot Ya'akov archaeological site in Israel. Credit: Photos by Gonen Sharon for the Hebrew University of Jerusalem

Evidence of sophisticated, human behavior has been discovered by Hebrew University of Jerusalem researchers as early as 750,000 years ago - some half a million years earlier than has previously been estimated by archaeologists.

The discovery was made in the course of excavations at the prehistoric Gesher Benot Ya'akov site, located along the [Dead Sea](#) rift in the southern Hula Valley of northern Israel, by a team from the Hebrew University Institute of Archaeology. Analysis of the spatial distribution

of the findings there reveals a pattern of specific areas in which various activities were carried out. This kind of designation indicates a formalized conceptualization of living space, requiring social organization and communication between group members. Such organizational skills are thought to be unique to modern humans.

Attempts until now to trace the origins of such behavior at various prehistoric sites in the world have concentrated on spatial analyses of Middle Paleolithic sites, where activity areas, particularly those associated with hearths, have been found dating back only to some 250,000 years ago.



This photo shows workers digging at the Gesher Benot Ya'aqov site archaeological site in Israel. Credit: Gonen Sharon for the Hebrew University of Jerusalem

The new Hebrew University study, a report on which is published this

week in *Science* magazine, describes an Acheulian (an early [stone tools](#) culture) layer at Gesher Benot Ya'aqov that has been dated to about 750,000 years ago. The evidence found there consists of numerous stone tools, animal bones and a rich collection of botanical remains.

Analyses of the spatial distribution of all these finds revealed two activity areas in the layer: the first area is characterized by abundant evidence of flint tool manufacturing. A high density of fish remains in this area also suggests that the processing and consumption of many fish were carried out in this area -- one of the earliest evidences for fish consumption by prehistoric people anywhere.

In the second area, identified evidence indicates a greater variation of activities - all of which took place in the vicinity of a hearth. The many wood pieces found in this area were used as fuel for the fire. Processing of basalt and limestone was spatially restricted to the hearth area, where activities indicate the use of large stone tools such as hand axes, chopping tools, scrapers, and awls. The presence of stone hammers, and in particular of pitted anvils (used as nutting stones), suggest that nut processing was carried out near the hearth and may have involved the use of nut roasting. In addition, fish and crabs were probably consumed near the hearth.

Provided by Hebrew University of Jerusalem

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