

TITLE: *The Earliest Known Map*

DATE: 6,200 B.C.

AUTHOR: *unknown*

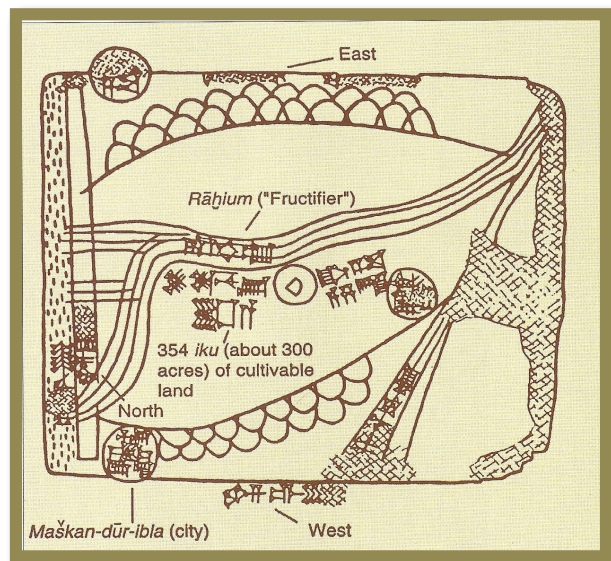
DESCRIPTION: The human activity of graphically translating one's perception of his world is now generally recognized as a universally acquired skill and one that pre-dates virtually all other forms of written communication. Set in this pre-literate context and subjected to the ravages of time, the identification of any artifact as "the oldest map", in any definitive sense, becomes an elusive task. Nevertheless, searching for the earliest forms of cartography is a continuing effort of considerable interest and fascination. These discoveries provide not only chronological benchmarks and information about geographical features and perceptions thereof, but they also verify the ubiquitous nature of mapping, help to elucidate cultural differences and influences, provide valuable data for tracing conceptual evolution in graphic presentations, and enable examination of relationships to more "contemporary primitive" mapping.

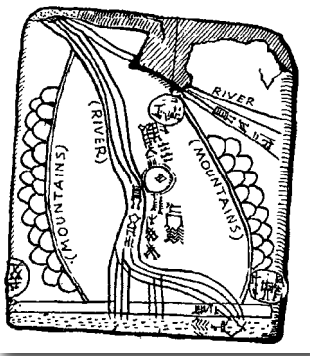


As such, there are a number of well-known early examples that appear in most standard accounts of the history of cartography. The most familiar artifacts put forth as "the oldest extant cartographic efforts" are the Babylonian maps engraved on clay tablets. These maps vary in scale, ranging from small-scale world conceptions to regional, local and large-scale depictions, down to building and grounds plans. In detailed accounts of these cartographic artifacts there are conflicting estimates concerning their antiquity, content and significance. Dates quoted by "authorities"

may vary by as much as 1,500 years and the interpretation of specific symbols, colors, geographic locations and names on these artifacts often differ in interpretation from scholar to scholar.

One such Babylonian clay tablet that has been generally accepted as "the earliest known map" is the artifact unearthed in 1930 at the excavated ruined city of *Ga-Sur at Nuzi* [Yorghhan Tepe], near the towns of present-day Harran and Kirkuk, 200 miles north of the site of *Babylon* [present-day Iraq]. Small enough to fit in the palm of your hand (7.6 x 6.8 cm), most authorities place the date of this map-tablet from the dynasty of Sargon of Akkad (2,300-2,500 B.C.E.); although, again, there is the conflicting date offered by the distinguished Leo Bagrow of the *Agade Period* (3,800 B.C.E.).





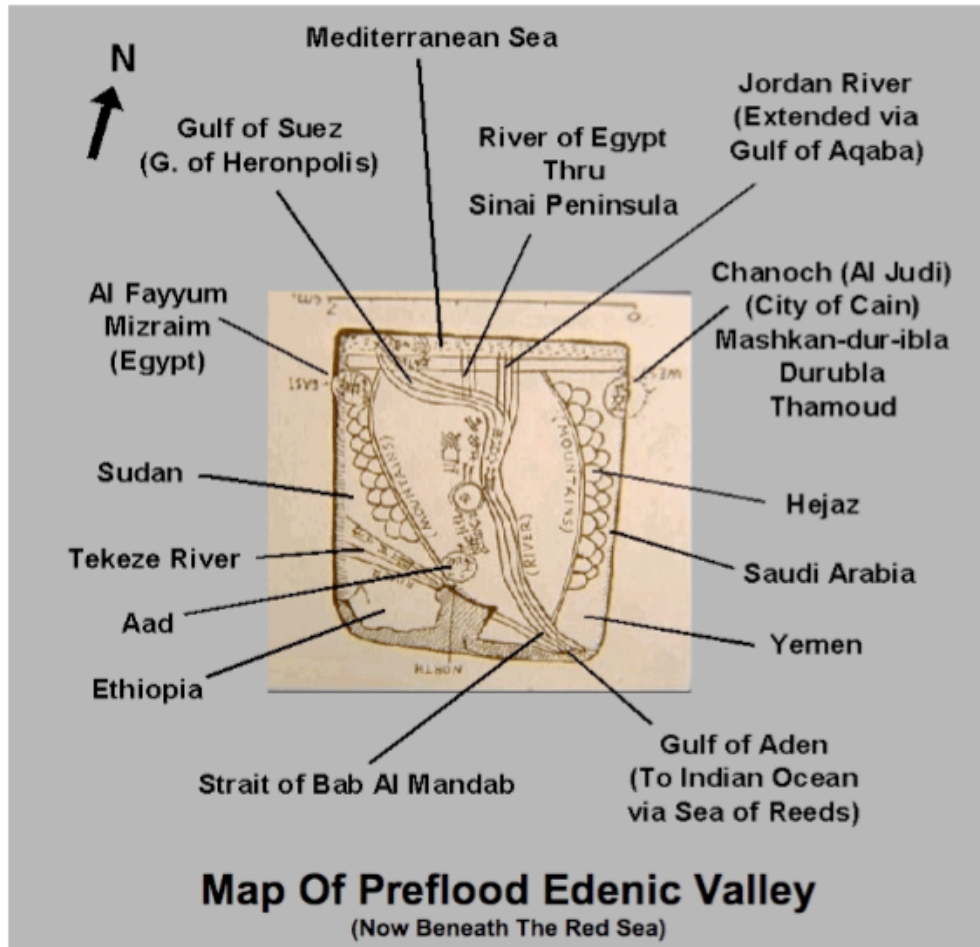
0 _____ 7cm

The surface of the tablet is inscribed with a map of a district bounded by two ranges of hills and bisected by a water-course. This particular tablet is drawn with cuneiform characters and stylized symbols impressed, or scratched, on the clay. Inscriptions identify some features and places. In the center the area of a plot of land is specified as 354 *iku* [about 12 hectares], and its owner is named *Azala*. None of the names of other places can be understood except the one in the bottom left corner. This is *Mashkan-dur-ibla*, a place mentioned in the texts from *Nuzia* as *Durubla*. By the name, the map is identified as of a region near present-day Yorghhan Tepe (*Ga-Sur* at the time, the name *Nuzi* 1,000 years later), although the exact location is still unknown.

Whether the map shows a stream running down a valley to join another, or running from that to divide into three, and whether they are rivers or canals, cannot be determined. The shaded area at the left side, to or from which the channels run, was named, but the writing is illegible. Groups of overlapping semicircles mark ranges of hills, a convention used by artists then and in later times.

The geographic content consists of the area of a river valley that may be that of the Euphrates River flowing through a three-lobed delta and into a lake or sea in the northern part of Mesopotamia. Also shown on this tablet may be the tributary river the Wadi-Harran, the Zargos Mountains in the east, the Lebanon, or Anti-Lebanon in the west, and cities that are symbolized by circles. North, East and West are indicated by inscribed circles, implying that maps were aligned in the cardinal directions then as they are now. This tablet also illustrates the *sexagesimal* system of mathematical cartography developed by the Babylonians and represents the earliest known example of a topographic map.

Below is yet another speculative interpretation of this clay tablet. This interpretation shows a much larger geographic area depicted, ranging from the Mediterranean Sea to Ethiopia.



However, while the Babylonian clay tablet map described here has been the generally accepted the “earliest known map”, another contender might be the cartographic artifact found in 1963 by James Mellaart in Ankara, Turkey during an excavation of *Çatalhöyük* in Anatolia. While less distinctive and on a much larger scale, this unearthed map-form is a wall painting that is approximately nine feet long and has an *in situ* radiocarbon date of 6,200 ± 97 B.C.E.

Mellaart believes that the map depicts a town plan matching *Çatalhöyük* itself, showing the congested “beehive” design of the settlement and displaying a total of some 80 buildings. One illustration of this map shows the painting from the north and east walls of the shrine. In the foreground is a town arising in graded terraces closely packed with rectangular houses. Behind the town an erupting volcano is illustrated, its sides covered with incandescent volcanic bombs rolling down the slopes of the mountain. Others are thrown from the erupting cone above which hovers a cloud of smoke and ashes. The twin cones of the volcano suggest that an eruption of Hasan Dag, rising to a height of 10,672 feet, and standing at the eastern end of the Konya Plain and visible from *Çatalhöyük*, is recorded here. These local volcanic mountains were important to the inhabitants of *Çatalhöyük* as a source of obsidian used in the making of tools, weapons, jewelry, mirrors and other objects. Further, from graphic embellishments around the mountain, Mellaart has speculated that the depiction of the volcano in an active state is accurate since volcanism in this area continued for some 4,000 years later.

Clearly, the *Çatalhöyük* “map” is still not the beginning of cartographic history. Investigation into the earliest beginnings of cartography will continue with a fair probability of further successes. This optimism is warranted by the fact the materials used during these periods to record such geographical spatial concepts were more durable elements such as stone, clay, metal, earthenware, etc., unlike later cartographic artifacts made of more fragile materials such as paper and wood.



Redrawing of the image at the Çatalhöyük site

Cartographic Properties and Current Situation of the Oldest Picture Map in Çatalhöyük
by *Turkay Gokgoz*

Abstract: *Çatalhöyük* was included as one of 30 historical heritages of the world by the World Monuments Foundation in New York (Brock, 2001). *Çatalhöyük* map is one of them for which secure dating is available. It is also important from the point of the purpose of rock art (Smith, 1987). It is indeed the world's first known city plan. In this study, digital images of the three sections of the map displayed at the Museum have been taken with a high-resolution camera. The pixels of analogous colors are converted to black, and thus the current situation of the map is determined. It can be evaluated as an excellent map from many cartographic aspects (i. e. accuracy, completeness, clarity and comprehensibility, legibility, and aesthetics) subjected to this paper keeping in mind that it was painted in 6200 ± 97 B.G. However, it has not been studied in its entirety, for the remaining sections of it have been badly damaged.

INTRODUCTION

All the major forms of prehistoric art are of potential value to the historian of cartography. However, by far the most important are the two classes of rock (or parietal) art: paintings (pictographs) and carvings (petroglyphs). While it is very difficult to place individual figures into chronological sequence, much less assign precise dates, prehistoric art can be described in the broadest of terms as dating either from the Upper Paleolithic and the Mesolithic, periods of hunter-gatherer-fisher populations, or from the post-Paleolithic period of agricultural populations

Archaeological information is unevenly spread geographically, through time, and by topic. Of the registered maps belonging to the prehistoric age, 37 are in France, seven in Italy, two in Malta and Denmark, and one each in Bulgaria, Germany, Iraq, Jordan, Morocco, Algeria, Egypt, Spain, Georgia and Turkey. The one in Turkey, which is subject to this paper, was found in *Çatalhöyük* which is the name of a Neolithic Age settlement located in Central Anatolia just 54 kilometers southeast of Konya province by highway.

More often than not, little direct and unambiguous evidence is available for reconstructing a behavioral picture of the people whose beliefs and values account for the different forms of the art. One reason for the ambiguities is that the most basic archaeological criterion - an absolute date for each picture - cannot be satisfied. The *Çatalhöyük* map is one of them for which secure dating is available. Through a dating technique known as radiocarbon-14, Mellaart and his team could date the settlement to 6200 ± 97 B.C.

The *Çatalhöyük* map is also important from the point of the purpose of rock art. It was excavated from a room whose contents and internal arrangements show it was a shrine or some sort of holy room, so it was a "product of moment," created for, or during, ritual and not at all intended to last beyond that event.

James Mellaart, David French and their colleagues discovered the site of *Çatalhöyük* in November, 1958, but they were not able to start excavation until 1961, continuing with the work until 1965.

Çatalhöyük ("höyük" means mound in Turkish) comprised twelve layers of houses with each layer bearing mud-brick houses built next to each other and sharing common walls. Access to interior residences was only available via climbing and stomping across other roofs to reach rooftop entry points. Families would live in these small houses for around 100 years, then for some as yet unknown reason, the house was filled with earth, and a new house, of exactly the same dimensions was built above the old house; it was thus the tumulus of *Çatalhöyük* came into being. The site was inhabited for approximately 1,000 years.

On Level VII of the *Çatalhöyük* map were found the buildings showing the crowded arrangement, the rarity of courtyards (all condemned houses used for rubbish disposal and sanitation) and the concentration of shrines, which are surrounded by private houses. The latter vary considerably in size, according to the social status of their owners or the size of the family. The minimum requirement is a single room with two platforms and wooden ladder, hearth, and oven, but most houses were larger and better appointed. The entrance shafts are now larger and frequently took the form of a long corridor with access to the roof. Red-painted plaster was occasionally used on benches and platforms. Hearths, rectangular or square in the upper levels, are most often circular, but they are still raised. The outside limit of the settlement presented a blank wall, with kitchen and storerooms directly behind. Mellaart describes the map in his Third Preliminary Report (1964) as follows: "... the larger building to the east (VII, 14) should probably also be regarded as a shrine on account of one of the most fascinating wall paintings found in it. Nine feet in length, it covered both walls above the northeast platform that was carpeted with fine reed matting. The interpretation of the subject depicted is, of course, subjective (and perhaps controversial) but it seems likely that the eighty or more squares drawn along the base in rows or terraces represent a view of a town and one has only to compare to see that this is indeed a possibility. Each house has its own walls and the internal divisions in the drawing remind one of the platforms, etc., in the plan, and one is struck by the variations and irregularities in the drawing of the individual houses. Therefore in our opinion this is a representation of a Neolithic town, probably *Çatalhöyük* itself, the houses of which rise in exactly the same manner as is shown in the painting.

Photographs of the Çatalhöyük site



Part of a representation of a town in a Neolithic wall painting from Catal Huyuk, Turkey, dated to the early seventh millennium B.C. Approximately three meters in length.

This brings us to the strange double-peaked object in the back and if one looks from top of the mound today, such objects are easily identified as mountains. Twin cones mark the position of Konya to the northwest, twin peaks crown the mighty mass of Karadag and in the far distance one sees on a clear day the double cone of Hasan Dagi (10,000 feet), then an active volcano and the highest mountain in the region.

Hasan Dagi had a special importance for the Neolithic inhabitants of Çatalhöyük, for it was the source of obsidian, the volcanic glass from which they made their tools and weapons, beads and mirrors, the commodity that they exported far and wide. The exploitation of the obsidian fields and a monopoly in the obsidian trade was probably the basis of Çatalhöyük's wealth. Its mysterious origin, sharpness, transparency, and reflective power were probably regarded as unusual if not "magic", the benevolent earth goddess's gift to Neolithic man. Volcanic eruptions still stir even the most unimaginative moderns and must have been regarded with awe by early man. How much more so then when his precious source of income was at stake! This brings one to the spots on the mountain, the objects spurting out of the right-hand top, the "cloud" of dots and strokes above (and to the right) of it and the lines extending from the base of the mountain. All these can be interpreted as the usual phenomena of a volcanic eruption: the rain of glowing volcanic bombs and red-hot rocks; the cloud of glowing particles above it and perhaps tongues of lava welling up from vents near the base of the mountain. It is known that the Central Anatolian volcanoes were active until the second millennium E.G. An "eye-witness" painting of an early seventh millennium eruption of Hasan Dagi is therefore certainly a possibility and in view of its economic importance a highly relevant subject to be recorded in a shrine.

The plaster background of the map is cream or dead white and was locally available from the Pleistocene lakebeds. All details represented on the map were drawn in red. The colors were finely ground with pestle and mortar but not perhaps mixed with animal fat or vegetable oil or white of egg, though all of which were available, dried in lumps or shaped into crayons and spread on flat stone palettes. Fine brush strokes imply the use of brushes, some extremely fine, whereas plain panels of red may have been painted with the use of a rag dipped in a pot of paint, as is still done today in the villages around Çatalhöyük. The paint was applied directly to the wall without previous tracing of outlines and the painters were evidently sure enough of themselves to dispense with this preliminary procedure.

The portion of the map on the north wall was divided (or could be divided) into four sections and transported to the Museum of Anatolian Civilization in Ankara. The section on the east wall was not removed from the wall when it was discovered due to the damage that it suffered over the thousands of years. Now, the three sections of the unique map from the north wall are on display and the fourth section is kept in the archives at the Museum.

CARTOGRAPHIC PROPERTIES OF THE MAP

It is certainly not right to search for today's technique and practice in the drawings of prehistoric and historic periods, especially in a Neolithic Age map and evaluate it according to the criteria of today. However, this view cannot or should not hinder such an evaluation of a map according to contemporary technical criteria. In fact, one cannot sufficiently interpret an old map without an evaluation made with such criterions. We can evaluate the map with respect to the five points of view (i.e. requirements) as follows.

Accuracy. Firstly, it is not possible to say that the houses are in their absolute positions because the houses were drawn separately and thus represented as if there were streets between them although they did not exist in the settlement indeed. The reason of this situation may be the intention of the possibility of selecting and identifying each house separately in the room that was most likely to have been extremely murky. However, the relative positions of the houses may be correct. In other words, the information about neighborhood among the houses (i.e. the topological relationships for adjacency) could be considered by the cartographer. In order to argue this situation, it is, of course, necessary to match the houses represented on the map with the corresponding ones shown on the plan of Level VII. Unfortunately it is not possible because the houses were also not drawn properly (i.e. as they are in real world) in both size and shape. Furthermore, the interior structure of the houses was not reflected exactly. As a result, we assume that the houses were represented as map symbols. In this case, the cartographer should have considered the size, shape and interior structure of the houses, because the size, shape and grain of the symbols are different. In other words, it seems to have been used a specific symbol for each house. Secondly, it can be said that the map was not based on any topographical measurement, and not drawn in a definite scale. Consequently, this is a map drawn from a bird's eye view, and the houses in real world were projected on the plane somehow. In addition, almost everyone looking at this painting compares it to a map, i.e. he thinks that the symbols depict the houses. Therefore, it can easily be assumed to be a map or city plan.

As for the twin-peaked volcano, all researchers are of the unanimous opinion that it is Hasan Dagi situated approximately 130 kilometers to the northeast of Çatalhöyük, and was depicted as a profile behind the houses. This method of representation is also valid today. On some kinds of thematic map, several objects (e.g. historical buildings on a city map) are represented in a similar manner making the three dimensional impression. Such a depiction technique serves the map's aim much more. When looking at the map from this point of view, it can easily be said that the design of the map is excellent. The volcano and its lavas could have not been emphasized in another way on a map. Even if we assume that the techniques for depicting the relief had already been developed at that time, the cartographer would again represent the volcano in this manner. Here the aim is to depict the destructive power of the volcano. However, the volcano, like the houses, has no geometric accuracy as expected. On the other hand, it was drawn in a smaller shape compared to the buildings, to give the impression that it is rather far. This indicates that the cartographer has taken into consideration the proportion between distance and appearance, and has incorporated the concept of perspective.

Completeness. A map must represent all objects serving its aim according to the scale. If it does not represent some of the objects to be expected, it is not acceptable from the aspect of completeness. If the map is considered as a city plan, it is obvious that all the houses were not represented. Although there were some 8,000 to 10,000 inhabitants between 6,800 and 5,700 B.C. in the settlement, only about eighty houses were represented on the map. Even if we consider the whole map could have not been obtained (due to the damage it suffered over thousands of years), it is assumed the map was so long that it covered the four walls of the shrine and it can also be said that all houses in the settlement were not represented.

If the map is thought to have been drawn for ritual (i.e. imploring help from their dead in a mass ceremony in order to get rid of the anger of the volcano), it should first be asked if all the dead were of equal social status. If they were, all the houses in the settlement had to be represented, and thus it cannot be said that the map is complete and suit the purpose of making it exactly. Otherwise, the selected houses (i.e. dead) could be represented on the map, and we can assume that the map is sufficient from the aspect of completeness in this case.

Another purpose in producing the *Çatalhöyük* map can be the determination of ownership. The drawing of the houses without roofs is sufficient proof of this view. As writing had then not yet been invented, drawing the houses without roofs and with their interiors exposed was a way to tell them apart and determine their owners. In this case, the mountains and their peaks are some kind of landmarks that aided in the determining of position and the map is a cadastral map. From this point of view, the map is not complete again, because all of the houses were not drawn on the map.

Clarity and Comprehensibility. The map was drawn in a quite clear and comprehensible way. Unnecessary objects such as figures of animals or plants were not drawn on the map. Using geometrical shapes for the symbols instead of pictorial shapes resulted in clear and technical appearance on the map. For what they were drawn or what they represented are comprehensible for all the points, lines and area symbols except the lines at the bottom of the volcano.

Legibility. This is unquestionably a wall map. Sizes of wall maps are usually bigger than published maps, and they are at medium or small scale, but the scale of this map is quite large. One looks at a wall map at a farther distance than a published map, and thus the symbols used in a wall map must be bigger in size to be legible. From this point of view, the *Çatalhöyük* map is excellent. Even if it is viewed from the farthest distance of the shrine, the symbols can be easily recognized. The colors used on the map help the occurrence of this situation as well. Drawing with red on the cream plaster background made the map more legible.

Aesthetics. Selecting purely aesthetic colors and drawing objects carefully have resulted in a beautiful map. Considering the drawing tools available at that time, one can easily say that it took much work to produce and a good work of art was the result.

CONCLUSIONS

Çatalhöyük was included as one of 30 historical heritages of the world by the World Monuments Foundation in New York. The *Çatalhöyük* map is one of them for which secure dating is available. It is also important from the point of the purpose of rock art. It is indeed the world's first city plan. It can be evaluated as an excellent map from many cartographic aspects mentioned in this paper keeping in mind that it was painted in 6200 ± 97 B.C. However, it has not been studied completely, and the remaining sections of it have been badly damaged.

I have discussed the current literature (Meece, Stephanie, 2006, 'A bird's eye view-of a leopard's spots. The *Çatalhöyük* 'map' and the development of cartographic representation in prehistory', *Anatolian Studies*, 56: 1-16.) suggesting an alternative interpretation with Cevat Ulkecul who lives in Istanbul and is the author of the book *8200 Yıllık Bir Harita Çatalhöyük Şehir Planı* [A 8,200 Year Old Map The Town Plan of *Çatalhöyük*]. He rejected Meece's questioning the *Çatalhöyük* map's status as a map. He agrees with Mallaart's later interpretation (1964 and 1967) that the twin cones and the rectangular symbols on the picture represent Hasan Dagi (not a leopard) and the

buildings (not just motifs) in the settlement respectively. We have decided to conduct a new study on this matter in the future, but, at the moment, I have no further comment on this matter. As a cartographer, I consider Mallaart's later interpretation more logical for me as well. I have done this study based on this assumption.



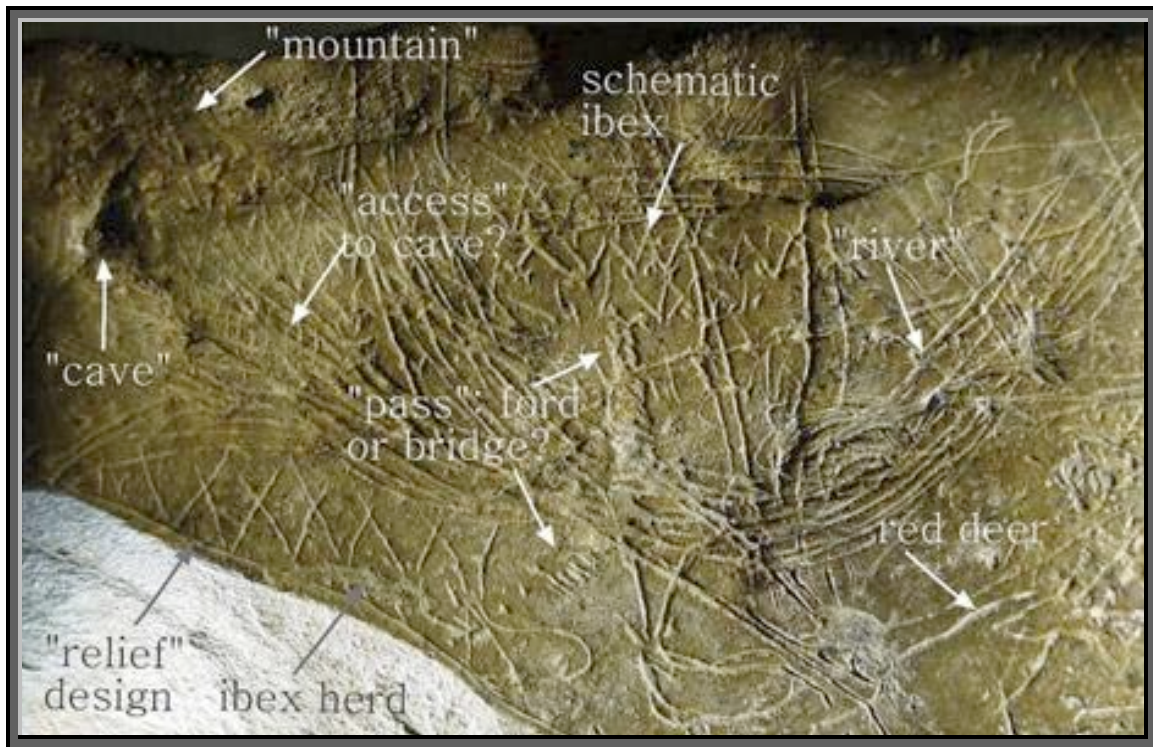
Man's earliest map, from 14,000 years ago.

By Fiona Govan in Madrid Published: 06 Aug 2009

A stone tablet found in a cave in Abauntz in the Navarra region of northern Spain is believed to contain the earliest known representation of a landscape. Engravings on the stone, which measures less than seven inches by five inches, and is less than an inch thick, appear to depict mountains, meandering rivers and areas of good foraging and hunting.

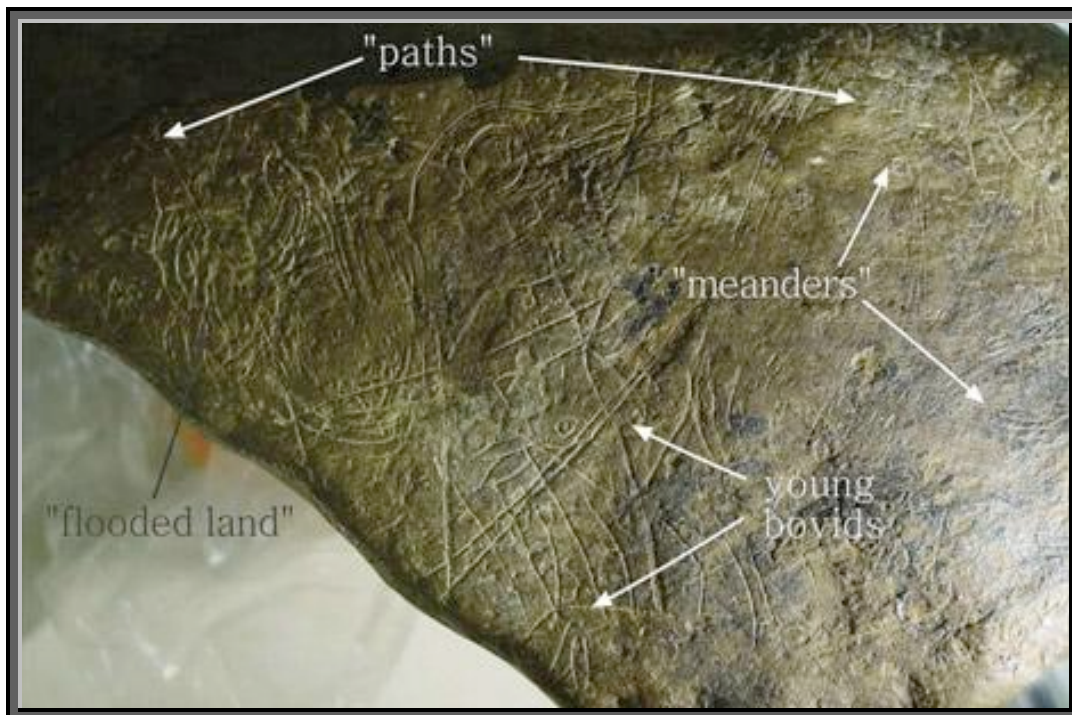
A team from the University of Zaragoza spent 15 years deciphering the etched lines and squiggles after unearthing the artifact during excavation of the cave in 1993. "We can say with certainty that it is a sketch, a map of the surrounding area," said Pilar Utrilla, who led the research team. "Whoever made it sought to capture in stone the flow of the watercourses, the mountains outside the cave and the animals found in the area." "The landscape depicted corresponds exactly to the surrounding geography," she said. "Complete with herds of ibex marked on one of the mountains visible from the cave itself."

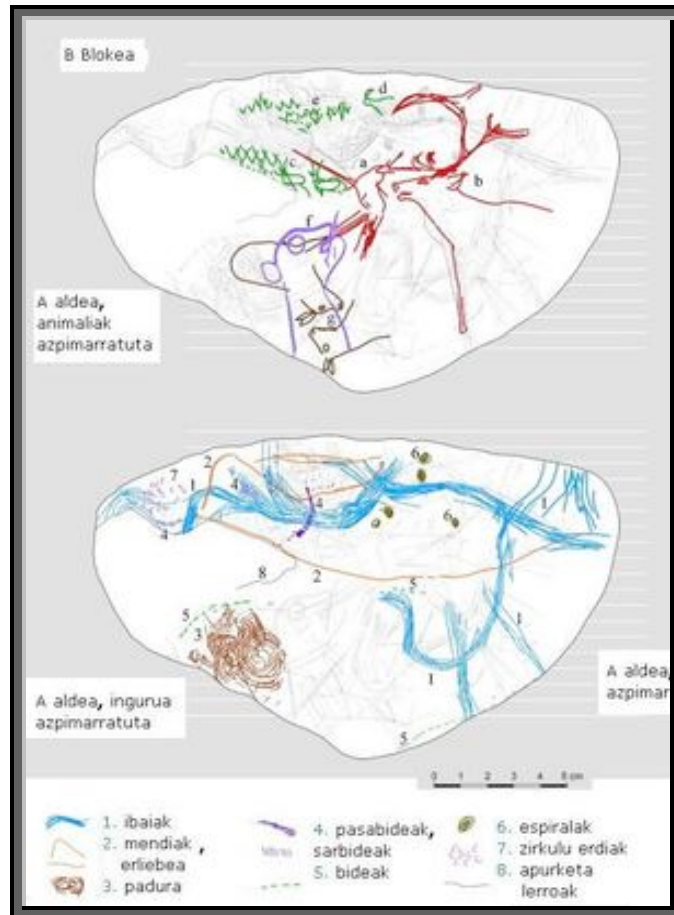
The research, which is published in the *Journal of Human Evolution* (Volume 57, Issue 2, August 2009), furthers understanding of early modern human capacities of spatial awareness, planning and organized hunting.



"We can't be sure what was intended in the making of the tablet but it was clearly important to those who populated the cave 13,660 years ago," said Ms Utrilla. "Maybe it was to record areas rich in mushrooms, birds' eggs, or flint used for making tools." The researchers believe it may also have been used as a storytelling device or to plan a hunting expedition. "Nothing like this has been discovered elsewhere in western Europe," she said.

An engraved block from the cave of Abauntz is interpreted as a *Magdalenian* map in which the actual surrounding landscape, including mountains, rivers, and ponds, is represented. Some possible routes or avenues of access to different parts of the geography are also engraved on the landscape. The engraving seems to reproduce the meandering course of a river crossing the upper part of side A of the block, joined by two tributaries near two mountains. One of these is identical to the mountain that can be seen from the cave, with herds of ibex depicted on its hillsides, on both sides of the gorge in front of which the cave of Abauntz is strategically located. In the southern part of the gorge, there is a completely flat area where the watercourses slow down, forming meanders and flooding in springtime. The following elements are also represented on the block: tangles of concentric strokes and bundles of lines forming very marked meanders. In short, all of these engravings could be a sketch or a simple map of the area around the cave. It could represent the plan for a coming hunt or perhaps a narrative story of one that had already happened. This paper is provided in the context of recent discussions on early modern human capacities of spatial awareness, planning, and organized hunting.





LOCATIONS:

Slide 100, Museum at Konya, Turkey;

Slide 100D is in the Semitic Museum at Harvard University (Cambridge, MA);

Slide 100E is located in Abauntz in the Navarra region of northern Spain.

REFERENCES:

*Bagrow, L., *The History of Cartography*, p. 31.

*Brock, J.P., "The Oldest Cadastral Plan Ever Found: The Çatalhöyük Town Plan of 6200 B.C.", *Proceedings, 42nd Australian Surveyors Congress*, pp. 25-28, September 2001, Brisbane, Queensland, Australia.

*Brown, L., *The Story of Maps*, pp. 33, 37.

*Dilke, O.A.W., *Greek and Roman Maps*, pp. 11, 102.

*Gokgoz, *Turkey Cartographic Properties and Current Situation of the Oldest Picture Map in Çatalhöyük*, The Portolan, Fall 2009.

*Harley, J.B., *The History of Cartography, Volume One*, pp. 113-115.

*Harwood, J., *To the ends of the Earth, 100 Maps that changed the world*, pp. 11-13.

*Hicks Jr., P.D., "Tracing the Origins of Wind Heads to Wind Gods", *Mercator's World*, Volume 2, Number 1, pp. 34-39.

*Mazoa C, Sopenaa M.C., Domingoa R. and Martínez-Bea M., "A palaeolithic map from 13,660 calBP: engraved stone blocks from the Late Magdalenian in Abauntz Cave (Navarra, Spain)", *Journal of Human Evolution*, Vol. 57, Issue 2, August 2009, pp. 99-111.

*Mellaart, J., "Excavations of Catal Hyük, 1963, Anatolian Studies", *Journal of the British Institute at Ankara*, vol. XIX, 1964. "Catal Hyük: A Neolithic Town in Anatolia", pp. 17-177.

*Mellaart, J., *Catal Huyuk - A Neolithic Town in Anatolia*. Thames and Hudson, 1967.

*Raisz, E., *General Cartography*, p. 5.

Smith, C.D. (1987), "Cartography in the Prehistoric Period in the Old World: Europe, the Middle East, and North Africa", in J.B. Harley and D. Woodward (eds.) *The History of Cartography*, Vol. 1: 54-101. Chicago & London: The University of Chicago Press.

*Steward, M., "The Catal Hyük Map", *Mapline*, no. 19, September 1980.

*Talbert, Richard J. A., Unger, R. W., *Cartography in Antiquity and the Middle Ages: Fresh Perspectives, New Methods* (Technology and Change in History), 2008, 299 pp.

* Talbert, R.J.A., Francesca Rochberg, *Ancient Perspectives*, 2012, pp. 9-46.

*Thrower, N.J.W., *Maps and Man*, p. 13.

*Ulkekul, C. 1999. *An 8,200 Year Old Map - The Town Plan Çatalhöyük*. Istanbul: Dönence Basim ve Yayin Hizmetleri.

*illustrated