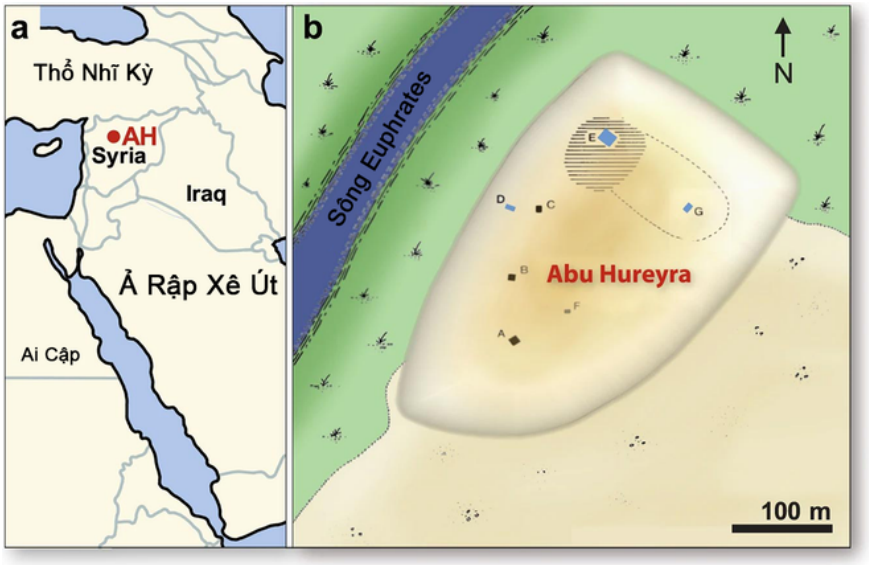
New discovery: One of the oldest human settlements destroyed by a piece of meteorite

Based on archaeological materials, scientists determined that the ancient village of mankind was melted down by a meteorite fragment.

In the 1970s, in eastern Syria, the Taqba Dam was built to stop the flow of the Euphrates River. Once completed, the dam formed Lake Assad and engulfed an archaeological site called Abu Hureyra. However, before the incident, archaeologists had the opportunity to excavate Abu Hureyra and unearth evidence that records the time the ancient nomads settled and cultivated.

Archaeologists extracted and discovered many types of materials, including parts of houses, food and tools. They are all evidence that helps them determine the time when the ancients converted to agriculture was nearly 12,800 years ago. One of the milestones in Earth's cultural and environmental history.

However, there are still many mysteries that exist within Abu Hureyra. Melted glass was discovered inside grains, rice, building materials and animal bones. The properties of this glass show that it was formed at extremely high temperatures, well above what humans could reach at that time, whether heat from fire, lightning or volcanoes.



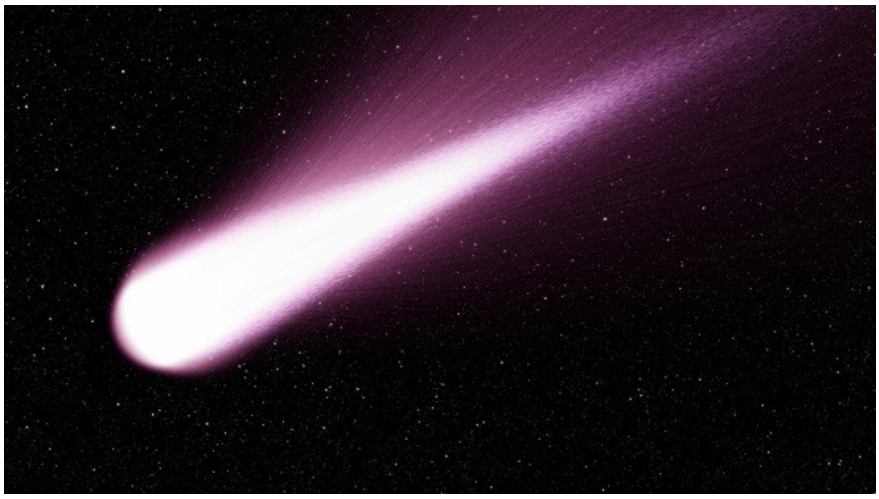
a. Middle East map; b. Map of Abu Hureyra ruins

"To make it easy to see, such temperatures can melt a car in less than a minute," said James Kennet, an emeritus professor of geology at Santa Barbara University, California. According to James, to such an extent, the cause must come from an extremely destructive event to emit large amounts of high-intensity energy, similar to an asteroid impact.

Based on material collected before the archaeological site was submerged, Kennett and his colleagues confirmed that Hureyra was the first evidence of a collision between asteroid debris and human settlement. According to Kennett, at the end of the New Wing (Pleistocene), a comet plunged into the Earth's atmosphere and exploded, breaking into pieces. The asteroid fragment is most likely part of this comet. The collision has contributed to the extinction of many large animals, including mammoths, horse breeds and American camels. It may also be the cause of the disappearance of the Clovis culture in North America and the sudden onset of the young Dryas cold spell.

Scientific reports containing archaeological team's findings are published in the Scientific Reports section of Nature.

"Our findings demonstrate that extreme heat can only be caused by a meteorite impact , " Kennett said. He and his colleagues first reported evidence of this event in 2012.



Abu Hureyra is located at the eastern end of the meteorite site of the Young Dryas Boundary. This place includes 30 scattered areas in the Americas, Europe and part of the Middle East. These monuments contain evidence of a massive fire, leaving a black carpet of large area, rich in carbon inside and containing billions of tiny diamonds, an abundance of platinum and spherical needles. Ultra-small ones only form at high temperatures.

The hypothesis of the effects of the young Dryas Boundary has gained a lot of attention in recent years, due to many new discoveries. Including an discovery of the crater crater located under the Hiawatha glacier in Greenland, Arctic; another on melting glass and similar evidence in the archaeological site of Pilauco, located in southern Chile.

"The village of Abu Hureyra must have been suddenly destroyed , " Kennett said. In the Pilauco archaeological site, the evidence gathered shows that the earliest signs of a human being appear after the black carpet. The Abu Hureyra site shows that it existed before the young Dryas. According to Kennett, an asteroid impact or gas explosion occurred nearby, causing a huge stream of heat to emit and melting glass inside the village.

Scientists analyze excavated glass to examine localization, shape, structure, formation temperature, magnetism and water content. The results showed that it was formed at very high temperatures and contained minerals like chromium, iron, nickel, sulfide, titanium, and even platinum, iridium-rich molten iron - all of which were formed in The temperature is higher than 2200 degrees Celsius.

"The materials are mostly rare below normal temperatures, but are easy to find during meteorite impact events , " Kennett said.

According to the report, melted glass is formed *"by the instant melting and evaporation of the biomass, soil and deposition of the mudflats and is immediately cooled afterwards"* . In addition, because the material found to resemble the material in the black carpet created by the Young Dryas Boundary, there is a high probability that the area was hit by a meteorite fragment, rather than a pellet. Perfect meteorite or an asteroid.

"The collision caused by a large asteroid will not cause material dispersion as in Abu Hureyra , " Kennett said. *"The largest comet fragment is capable of generating thousands of gas explosions within minutes on an entire hemisphere surface. The young Dryas Bound hypothesis suggests that this phenomenon is the cause of the same amount of matter. the time dispersed over 14,000 km in the southern and northern hemispheres. Discoveries in Abu Hureyra are stronger support for this hypothesis.*

According to ScitechDaily