

Deeper into the cave: Scientists share new details on prehistoric artworks

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Full-scale reproductions of frescos found at the cave of Pont-D'Arc, also known as the Chauvet cave, on display in Vallon Pont D'Arc, France, April 10, 2015. Thierry Orban/Abaca Press/TNS

Slowly but surely, the mysterious Chauvet cave in France is giving up its secrets.

The cave was discovered in the south of France at the end of 1994 by three amateur spelunkers. Before the explorers found it, scientists believe that no human had stepped foot inside it for more than 27,000 years.

Studies have shown that many of the ancient and beautifully preserved prehistoric paintings of horses, cave lions and rhinoceros on the cave's walls were made more than 30,000 years ago. They are some of the oldest known artworks on the planet.

Now, scientists have dated more than 250 rock art samples, animal bones and the remains of charcoal used by humans scattered on the ground. They have created the most accurate timeline yet of who used the cave and when.

A Place To Create Art

The new research finds that humans used the cave during two distinct periods, which were separated by several thousands of years. The study was published Monday in the Proceedings of the National Academy of Sciences.

Two years ago, the cave was declared a UNESCO World Heritage site.

The data suggest the first period of human occupation lasted from 37,000 to 33,500 years ago. The second period began 31,000 to 28,000 years ago and lasted for 2,000 to 3,000 years, the researchers wrote.

People never lived in the cave, explained Anita Quiles and Jean-Michel Geneste, two of the authors on the paper. It appears the early humans went there mostly to create their symbolic art. Quiles is with the French Institute of Oriental Archeology, and Geneste is with of the Ministry of Culture and Communication in Paris,

Two Groups Of Human Visitors

“A human group (band or tribe) visited the Chauvet cave during the first period around 36,000 years ago for cultural purposes,” they wrote in an email. “They produced black drawings of huge mammals. Then, several thousands of years after, another group from another place with another culture visited the cave.”

The two groups, separated by thousands of years, had no connection with each other, they said.

The first round of visits by humans likely lasted longer than the second, and was also when most of the drawings were done. Samples of 23 charcoal drawings were taken from different parts of the cave. Included are the panel of the horses, the alcove of the lions, the panel of the reindeer and the panel of the bison.

Almost all of the dates of these drawings correspond to the oldest phase, the authors found. Only two of them corresponded with the second phase, and this latter group of cave users were responsible for many of the torch marks on the wall.

Bears Add To The Picture

Bears, also left their mark on the cave walls, through scratches over and under the art. They appear to have used the cave from 48,500 to 33,300 years ago.

Although their occupation of the cave overlapped with humans, Quiles and Geneste said it is unlikely that both groups were there at the same time. They believe the bears used the cave to hibernate but spent spring and summer out of the cave. Perhaps it was only after the bears left that humans decided to use it.

“Humans would have to have avoided encountering the bears, as you can image,” Quiles and Geneste said. “After all, a cave bear is an 880-pound carnivore!”

The authors were also able to determine that humans stopped using the cave around the time of rockfalls. The rockfalls may have sealed off the entrance to the cave.

The authors said the chronology of who used the cave and when will continue to become more precise as more dates are added to their model. Many questions remain. For example: Are the red paintings as old as the black paintings?

“Only the black paintings have been dated,” Quiles and Geneste wrote. “The dating technique for the red paintings has yet to be developed.”