

Atapuerca : Landscape



View from the Serra de Atapuerca Hills towards the South west

Remains discovered there in 1976! at

Sima del Elefante 1,1-1.4 mya

Gran Dolina: 800,000 kya

Sima de los huesos 600 to 300,000 kya pre-neanderthal 1600 human fossils!

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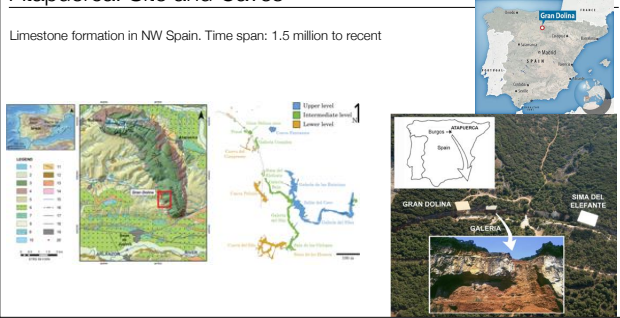
Atapuerca: Hominid Fossils



Fossils representing 4 or more hominid species.

## Atapuerca: Site and Caves

Limestone formation in NW Spain. Time span: 1.5 million to recent



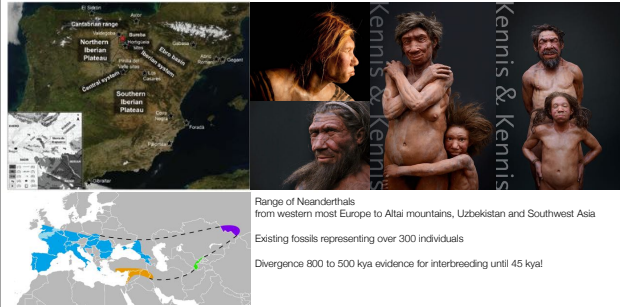
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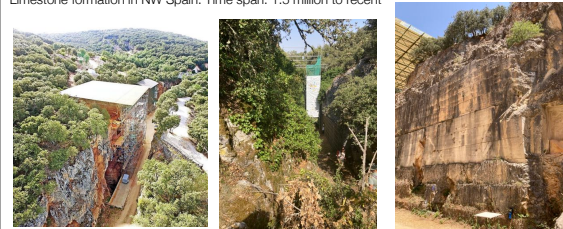
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## Atapuerca, in the Neanderthal world



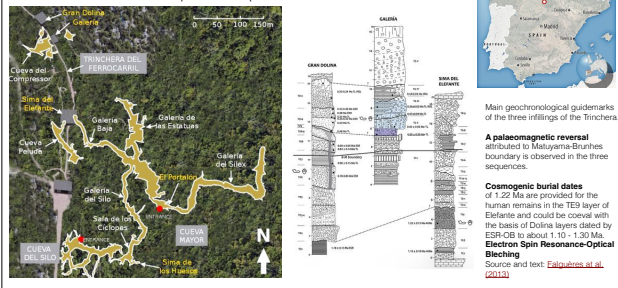
## Atapuerca: Site and Geology

Limestone formation in NW Spain. Time span: 1.5 million to recent



## Atapuerca

Limestone formation in NW Spain. Time span: 1.5 million to recent



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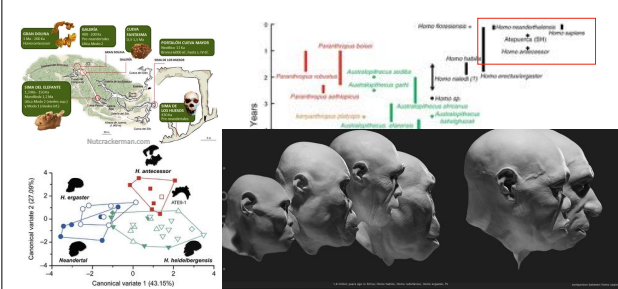
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## Atapuerca

[https://link.springer.com/chapter/10.1007/978-3-319-59476-1\\_5/figures/1](https://link.springer.com/chapter/10.1007/978-3-319-59476-1_5/figures/1)



## Atapuerca, *Homo antecessor* ?

Limestone formation in NW Spain. Time span: 1.5 million to recent



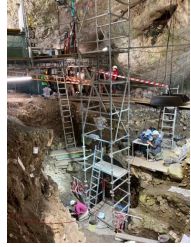
*Homo antecessor*

*Homo heidelbergensis*

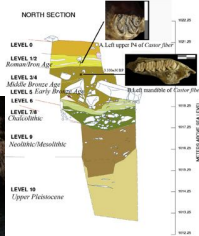
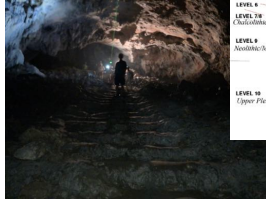
## Atapuerca, Portalón and Cueva Mayor

Limestone formation in NW Spain. Time span: 1.5 million to recent

Portalón: Time span: 12 ky to recent



*Homo sapiens*



## Sima de los huesos



Miguelon 430,000 years old

A medio kilómetro, a la derecha de la entrada a la trinchera, está situada la Cueva Mayor. En un pozo de 13 metros que se encuentra en la parte más profunda de la cueva se halla la Sima de los huesos, un lugar de enterramiento. Allí se conservan fósiles de 30 individuos de Homo Heidelbergensis. Se le llama así porque el primer ejemplar fue descubierto en la aldea alemana de Mauer, cerca de Heidelberg, en 1907.



Excalibur 350,000 years old

En la Sima de los huesos se ha encontrado también un bifaz adornado al que se le ha dado el nombre de Excalibur. Encontrar este artefacto en un lugar de enterramiento así puede significar una cosa: el Heidelbergensis realizaba ritos funerarios que incluían facilitar objetos al difunto para que pudiera realizar el viaje a la otra vida.



## Sima de los huesos

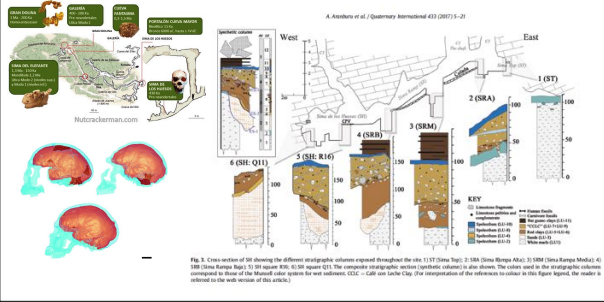
more than 6500 human fossils from at least 28 individuals are represented in a single stratigraphic level



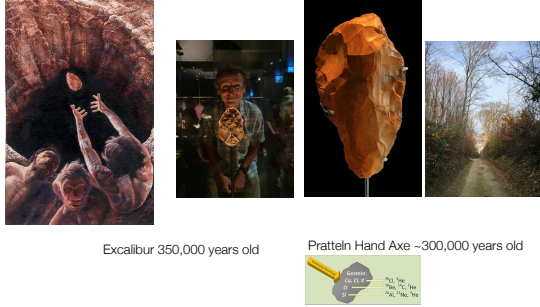
Fig. 1. Cranium 7 (top left), Cranium 10 (top right), and Cranium 17 (bottom) from SH.

The SH site is a small chamber at the foot of a shaft located deep inside an underground karst system (13). To date, more than 6500 human fossils from at least 28 individuals are represented in a single stratigraphic level that we have redated using a suite of numerical and relative dating methods (12).

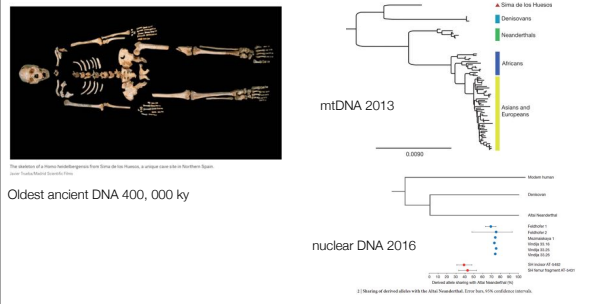
## Sima de los huesos (Pre-Neanderthals?)



## Sima de los huesos (oldest burial site in Europe?)



## Sima de los huesos





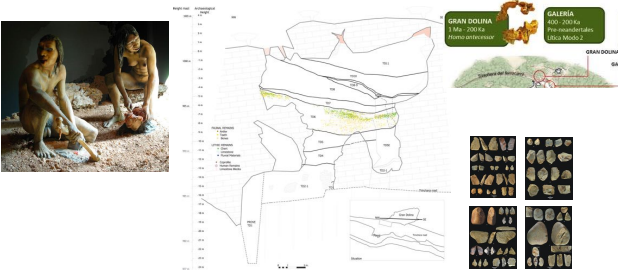
## Gran Dolina, *Homo antecessor* (ancestor or cousin?)



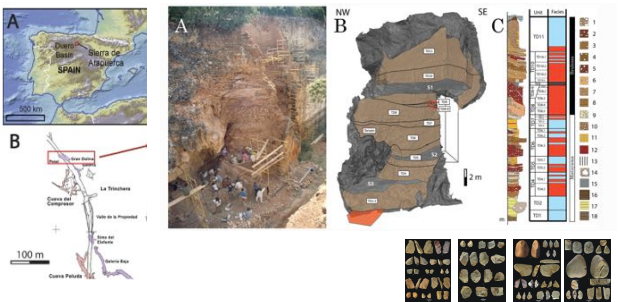
Una cueva con once estratos identificados y una cronología que va desde hace 1.200.000 años hasta los 250.000 años. En ella se han hecho dos descubrimientos fundamentales. El primero, fragmentos de un cráneo perteneciente a una nueva especie, el *Homo Antecessor*, que vivió hace 800.000 años y que fue, probablemente, el antepasado del *Homo Heidelbergensis*.

Y el segundo, hace 450.000 años la cueva fue usada como campamento para un grupo de *Homo Heidelbergensis* con una industria lítica bien desarrollada para el momento. Existen pruebas, huellas de incisivos en restos óseos humanos, que demuestran que estos homínidos practicaban el canibalismo infantil devorando a los niños de las tribus rivales para destruirlos.

## Gran Dolina

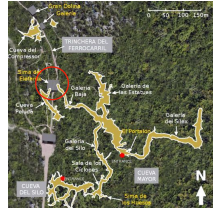


## Gran Dolina



A Gran Dolina site in 1994 (M. A. Martín). B 3D model of the Gran Dolina site in 2012. Brown areas indicate stratigraphic units. Grey areas are the wall and roof of the cave. The red area is the current situation of the TD1 and TD2 test pit. C Stratigraphic column of Gran Dolina site (Campaña et al., 2017). Legend Sedimentary facies: 1, Debris fall; 2, Debris flow facies A; 3, Debris flow facies B; 4, Debris flow facies C; 5, Debris flow facies D; 6, Debris flow facies E; 7, Debris flow facies F; 8, Mud flow; 9, Channel facies A; 10, Channel facies B; 11, Floodplain; 12, Decantation; 13, Speleothem; 14, Breakdown; 15, Phosphatic accumulation; 16, Weathering detritus; 17, Autochthonous fluvial facies A; 18, Autochthonous fluvial facies B. Campaña et al., (2017) for a detailed description of these facies

## Sima del'Elefante



Es el primer yacimiento que nos encontramos al empezar a caminar por la Trinchera. Es una cueva colmada de sedimentos, que quedó al descubierto. Su nombre se debe a la presencia de restos de elefantes entre sus fósiles. En marzo de 2008 se descubrió la mandíbula de un hombre joven de hace 1,2 millones de años y cuyo género está aún por precisar. Esta es la mandíbula del *Homo* sp.

## Sima del'Elefante

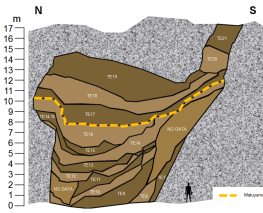
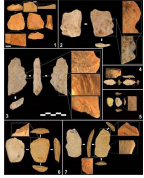


July 2022

The new human fossil discovered in the TE7 level of the Sima del Elefante site in the Sierra de Atapuerca is about 1.4 million years old, and samples are already being obtained for analysis in the Geochronology laboratories at CENIEH

The first week of July 2022 will enter the history of human evolution. Excavation on Level TE7 of the Sima del Elefante cave site in Atapuerca (Burgos, Spain), coordinated by Rosa Huguet and Xose Pedro (IPHES), has yielded an extraordinary surprise discovery: the partial face of a human being whose age could be roughly 1.4 million years. Geological samples are currently being taken to estimate the age of this human fossil from TE7 at the Geochronology laboratories of the Centro Nacional de Investigación sobre la Evolución Humana (CENIEH) in Burgos, Spain. The datation of the face of the first European will be carried out by three methods: Electronic Spin Resonance (ESR), Paleomagnetism and Cosmogenic Nuclides.

## Sima del'Elefante



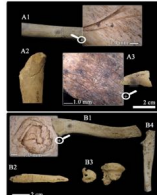
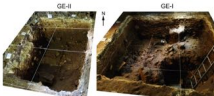
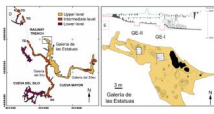
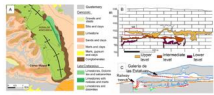
The Brunhes-Matuyama reversal, named after Bernard Brunhes and Matuyosi Matuyama, was a geologic event, approximately 781,000 years ago, when the Earth's magnetic field last underwent reversal

## Trincheria Galeria



Los depósitos fósiles de la Trincheria Galeria abarcan de 200.000 años a 450.000. Es una trampa natural: los animales caían por el hueco de arriba, ya fuera por despeñe o provocados por un grupo cazador, y el homo heidelbergensis (antepasado del neandertal) entraba en la cueva, despiezaba al animal y se llevaba las mejores partes antes de que llegaran otros carroñeros más fuertes.

## Trincheria Galeria



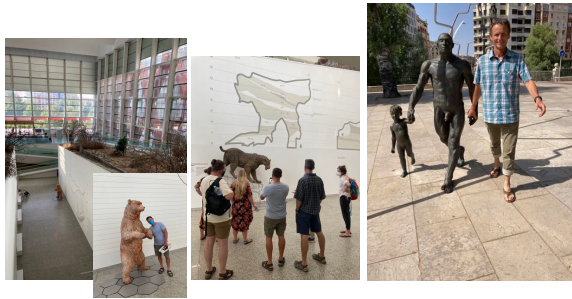


Human Evolution Museum in Burgos

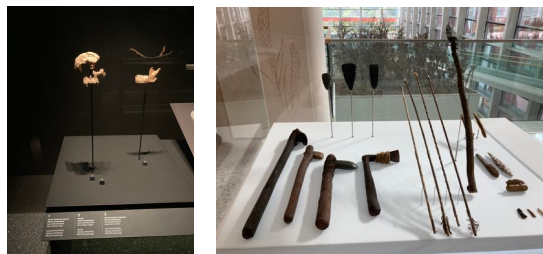


CENIEH

Human Evolution Museum in Burgos



Human Evolution Museum in Burgos





### Altamira Cave, Upper Paleolithic (36 kya)



the first European cave paintings for which a prehistoric origin was suggested and promoted. Sautuola published his research with the support of Juan de Vilanova y Piera in 1880, to initial public acclaim.

Thought to have been inhabited for the first time 35,600 years ago, various tribes moved in and out, occupying the Altamira caves almost continuously for some 22,000 years, eventually being abandoned altogether about 13,000 years back.

The very last dwellers were the earliest Homo Sapiens, or modern man, although some debate still exists as to whether pre-evolution humans and the earlier Neanderthals, who would have been among the first settlers in the Altamira caves, actually lived alongside each other.

### European Upper Paleolithic Cave Art (36 kya)



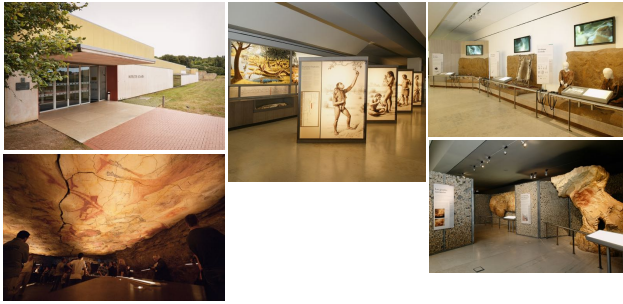
Modern Human movement from Africa into Europe

### Altamira Cave, Upper Paleolithic (36 kya)



Bird bone air brush

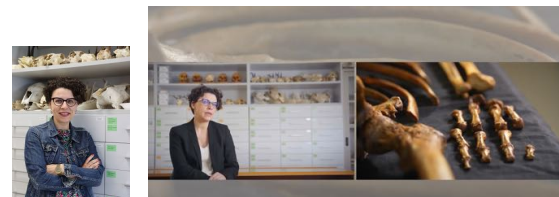
### Altamira Museum with "neocave"



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### Ana B. Marin-Arroyo, U of Cantabria in Santander



Esta burgalesa ha sido pionera en abrir la línea de investigación en Bioarqueología en la Universidad de Cantabria desde un enfoque multidisciplinar / En uno de sus proyectos busca conocer las causas de la extinción de las últimas poblaciones de Neandertales en los países del sur de Europa.

<https://www.youtube.com/watch?v=mHd4q8XAYc>

Paleolithic animals in Europe



cave hyena, cave bears, lions, ibex, woolly mammoth. wholly rhinoceros, bison, aurochs, horses, dear,

Paleolithic animals in Europe



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