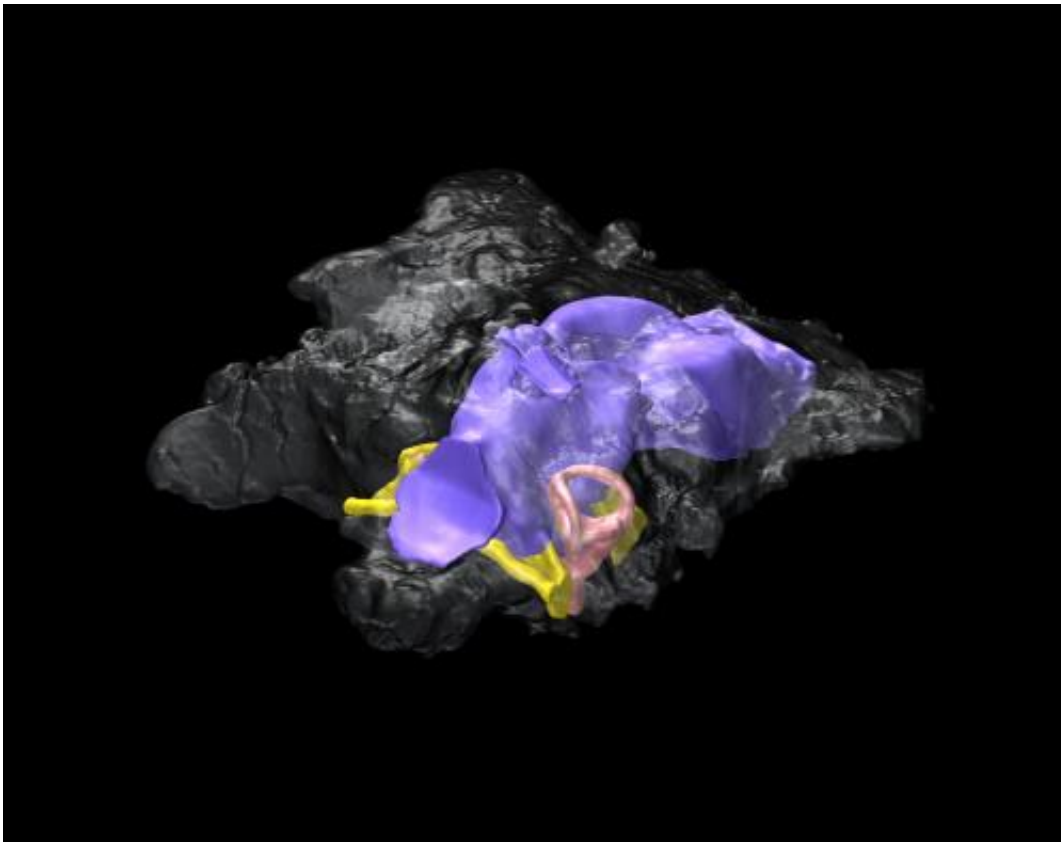


The brain of the ampelosaur from Spain revealed in 3D

January 23 2013



This image shows a 3D reconstruction of del cerebro de Ampelosaurus sp.'s brain. Credit: O. Sanisidro.

The remains of the ampelosaur found in 2007 in the site of Lo Hueco (Cuenca) have allowed the 3D reconstruction of the brain of this animal, according to an investigation in which the Spanish National Research

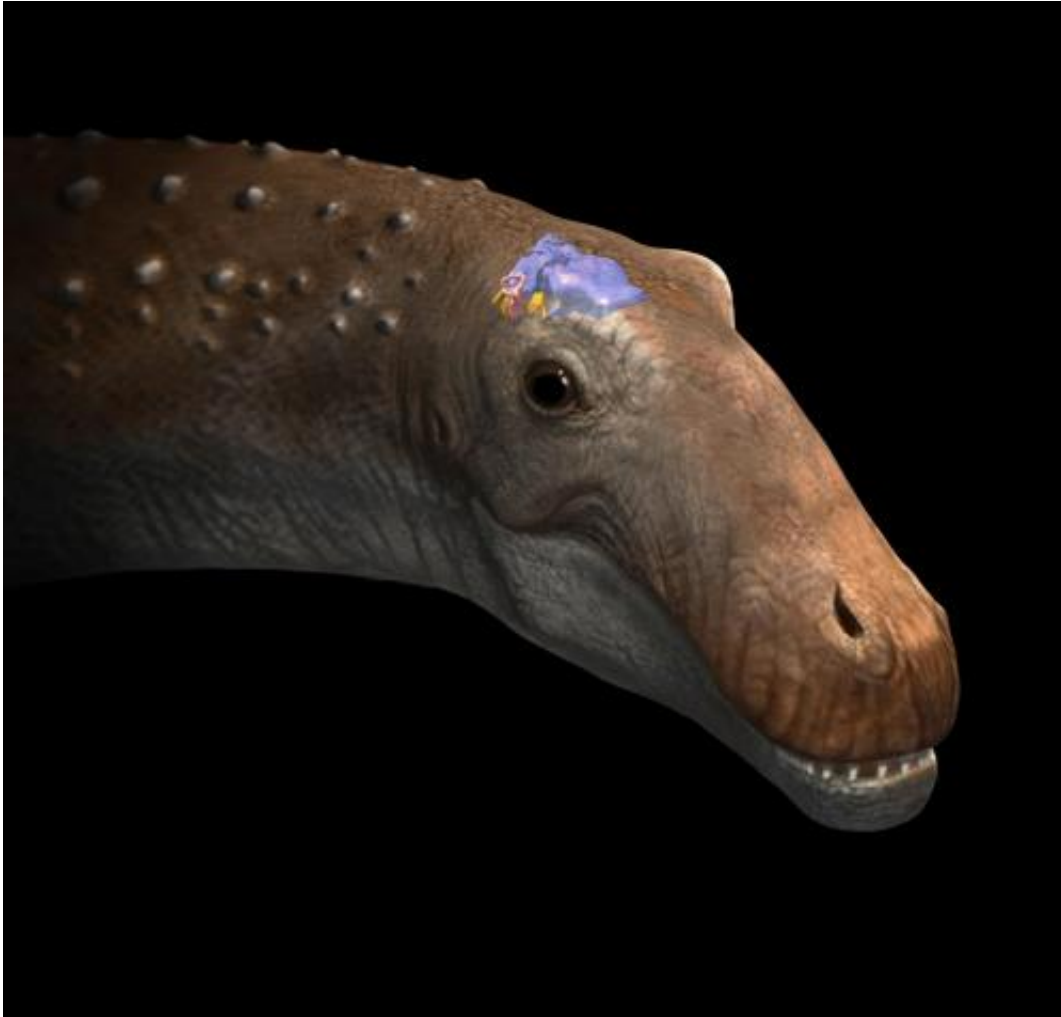
Council (CSIC) has taken part. The work, published today in the online journal *PLOS ONE*, has been carried out based on the fossilized remains of its skull, which are about 70 million years old (Late Cretaceous).

Up to now, only one species of the genus is known, *Ampelosaurus atacis*, which was discovered in France. However, the differences between the Spanish and the French fossils do not rule out that they could represent [distinct species](#).

The researcher from the National Museum of Natural Sciences (CSIC) Fabien Knoll, who has conducted the investigation, considers that "more fossils are necessary to establish that we are dealing with a new species". For this reason, the team has identified the specimen as *Ampelosaurus* sp., which leaves open its specific identity.

Little evolved brain

The ampelosaur pertains to the sauropod group, large-sized dinosaurs that settled widely during the [Mesozoic Era](#) (which began 253 million years ago and ended 66 million years ago). More precisely, it is a titanosaur, a group of plant eating animals that were dominant during the last half of the Cretaceous (last period of the Mesozoic). The first sauropods appeared about 160 million years earlier than the ampelosaur.



This image shows Ampelosaurus sp.'s head with its 3D brain reconstruction.
Credit: O. Sanisidro.

However, despite being the fruit of a long evolution, the brain of the ampelosaur does not show any notable development. Knoll explains: "This saurian may have reached 15 m in length; nonetheless its brain was not in excess of 8 cm". According to the CSIC researcher: "Increase in [brain size](#) was not favored in the course of sauropod evolution".

Another of the characteristics yielded by the reconstruction of the Cuenca ampelosaur brain is the small size of the [inner ear](#). According to

Knoll: "This may suggest that the ampelosaur would not have been adapted to quickly move either its eyes or its head and neck".

In January of 2012, Knoll conducted the investigation that led to the reconstruction of another sauropod, *Spinophorosaurus nigeriensis*. The simulation in 3D of its brain revealed that that species, in contrast to what the study of the ampelosaur braincase demonstrated, presented a fairly developed inner ear.

For the CSIC researcher: "It is quite enigmatic that [sauropods](#) show such a diverse inner ear morphology whereas they have a very homogenous body shape; more investigation is definitely required".

Provided by Spanish National Research Council

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