

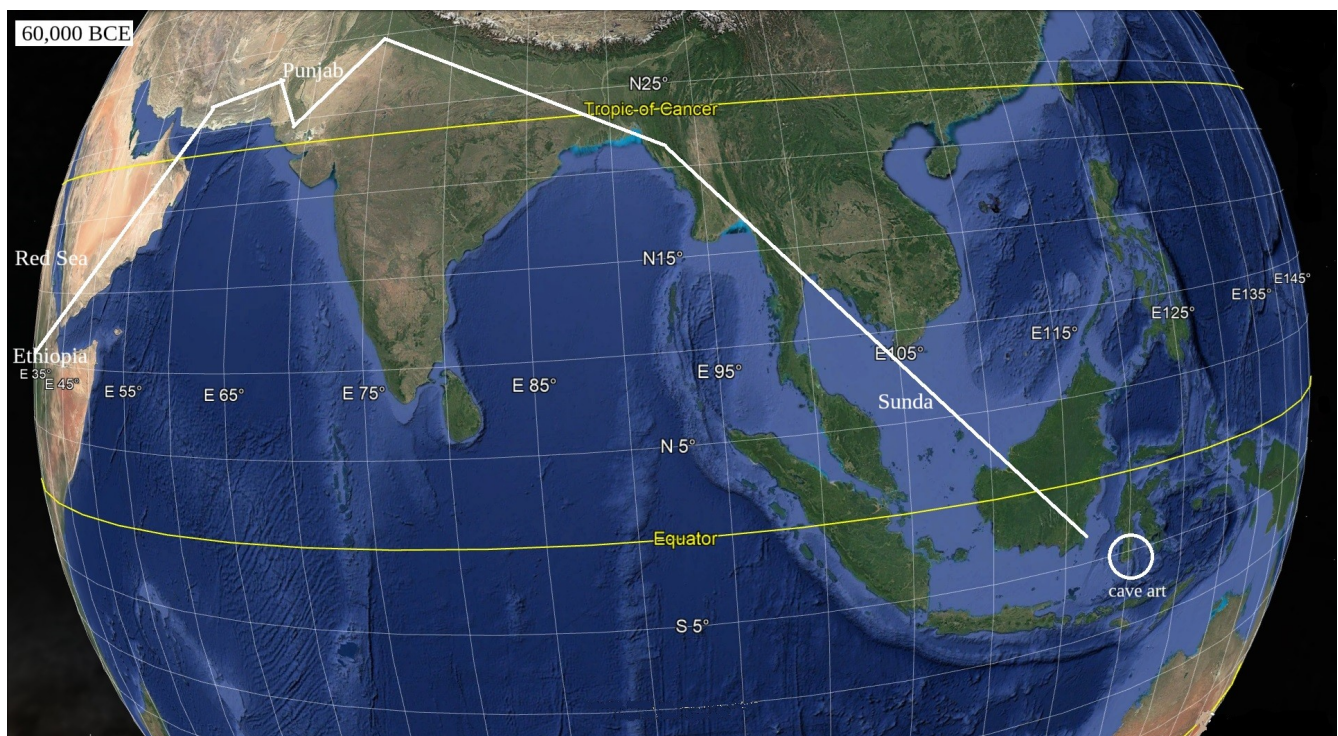
DNA C Painted the Oldest Cave Art in Sunda Land

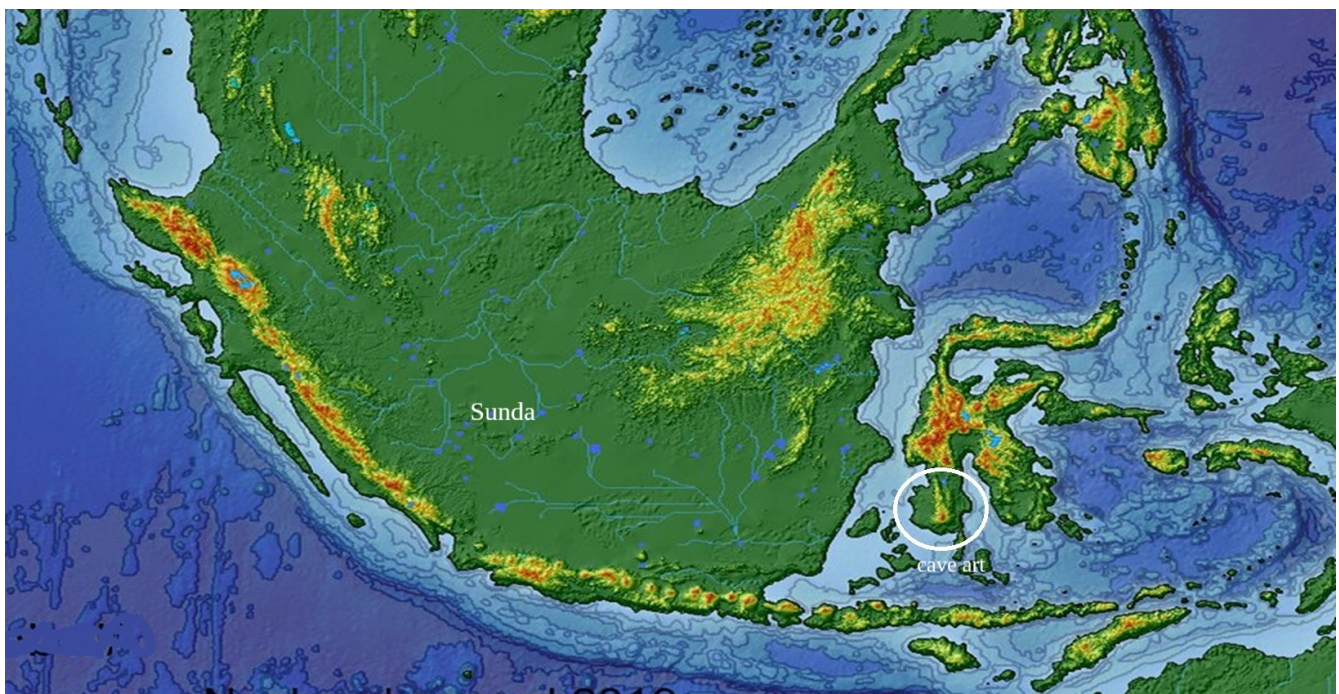
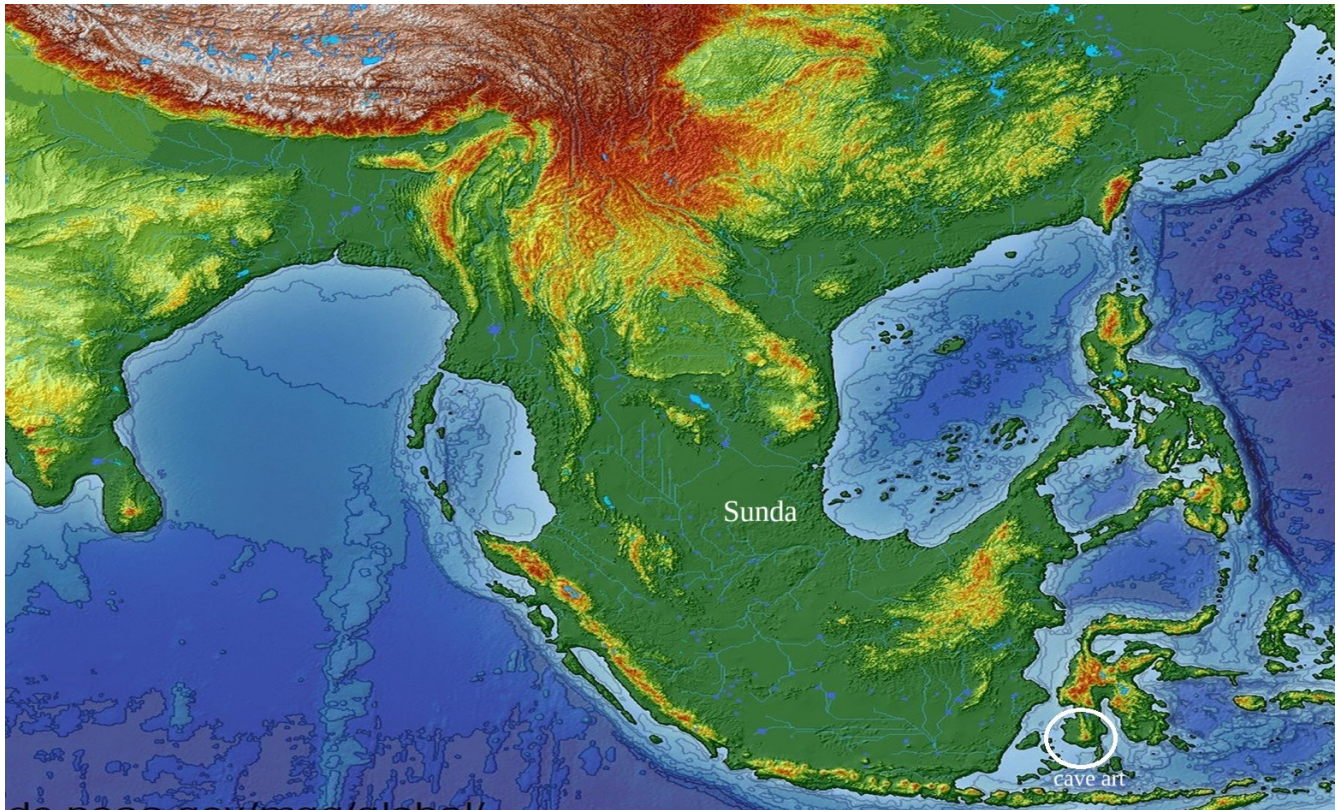
by Potluri Rao In Seattle ©2018 (CC BY 4.0)

Fifty years ago, people discovered some cave art in Sulawesi island of Indonesia. Recently, they were dated to be more than 50,000 years old. They were the oldest known narrative cave art, in the middle of nowhere.

Who were the people who painted the superb paintings that are comparable in technical skills to the modern day paintings?

To find an answer, we created a computer generated landscape of 50,000 years ago. Before 20,000 BCE, much of the world was covered with glaciers, and the seawater was far below the current levels. As shown in the map below, the area that is medium blue was fertile lands with rainwater rivers. The ancient fertile lands are now submerged. We used altitude data to artificially lower the sea levels. We traced DNA samples from Ethiopia (Africa) to the cave art. The people in Sunda were the DNA C, the current population in China and Mongolia. When Sunda was submerged, they moved to China. They lived only in the Tropical Zone, warm and toasty. They never heard of Ice Age or Stone Age. They were advanced logic based cultures, explorers and pioneers, that voluntarily left Ethiopia (Africa) 100,000 years ago, in search of dependable perennial rainwater resources. They had abundant supply of food resources. They had nothing to do with the Homo Sapiens of Central Africa, Ethiopia, or Europe.

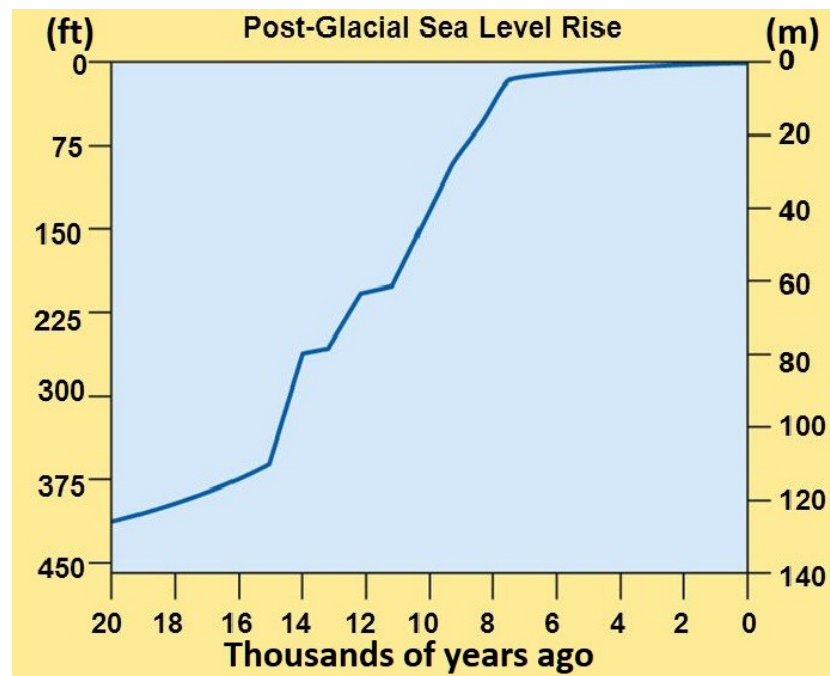




The above maps are computer generated landscape of 50,000 BCE, at the time the Sulawesi caves were painted. At that time, the seawater was far below the current levels, the current Thar desert (Punjab) was a fertile valley, and the perennial rainwater river the Yamuna connected Punjab and Sunda. There was a continuous path of rainwater rivers from Ethiopia (Africa) to Sunda. Some Homo Sapiens voluntarily left Ethiopia, 100,000 years ago, in search of dependable perennial rainwater resources. They discovered Sunda. They lived only in the Tropical Zone, warm and toasty.



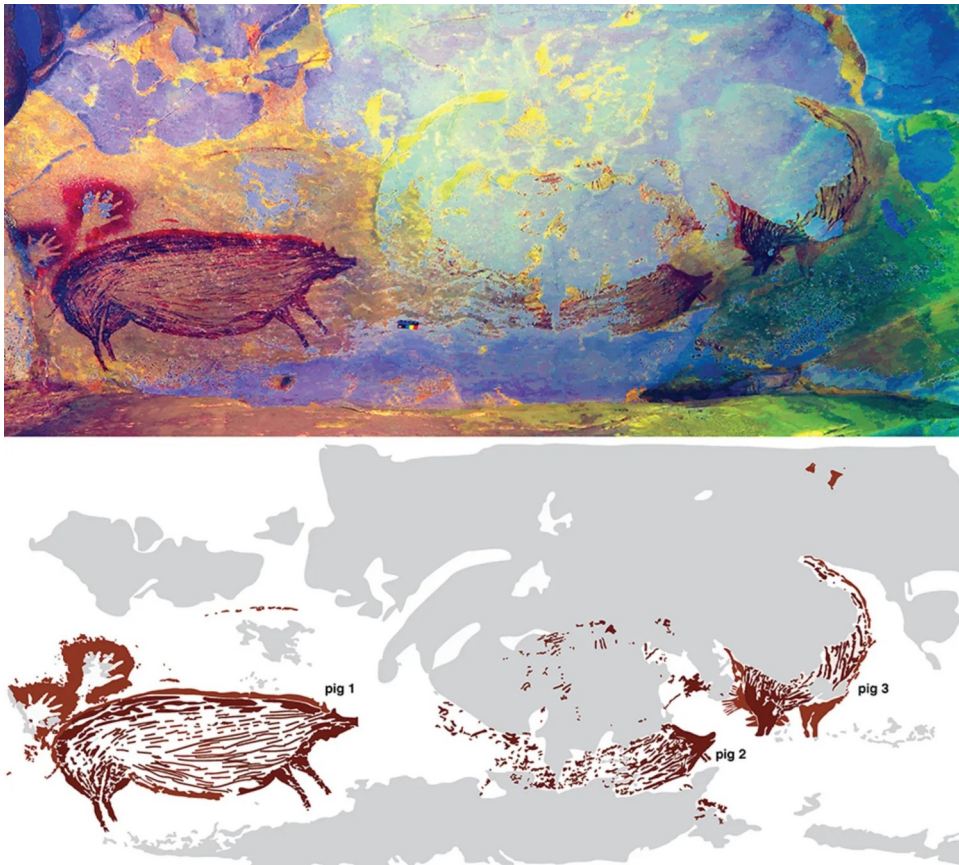
The labels in the above map show depth in meters and feet.



The above map shows sea levels over the last 20,000 years, since the start of the glacial melt. The cave art was painted 50,000 years ago, when all the medium blue area was well above the sea levels.

Source: <https://www.bbc.com/news/world-asia-55657257> 13 January 2021

Archaeologists have discovered the world's oldest known animal cave painting in Indonesia - a wild pig - believed to be drawn 45,500 years ago.



Painted using dark red ochre pigment, the life-sized picture of the Sulawesi warty pig appears to be part of a narrative scene.

The picture was found in the Leang Tedongnge cave in a remote valley on the island of Sulawesi.

It provides the earliest evidence of human settlement of the region.

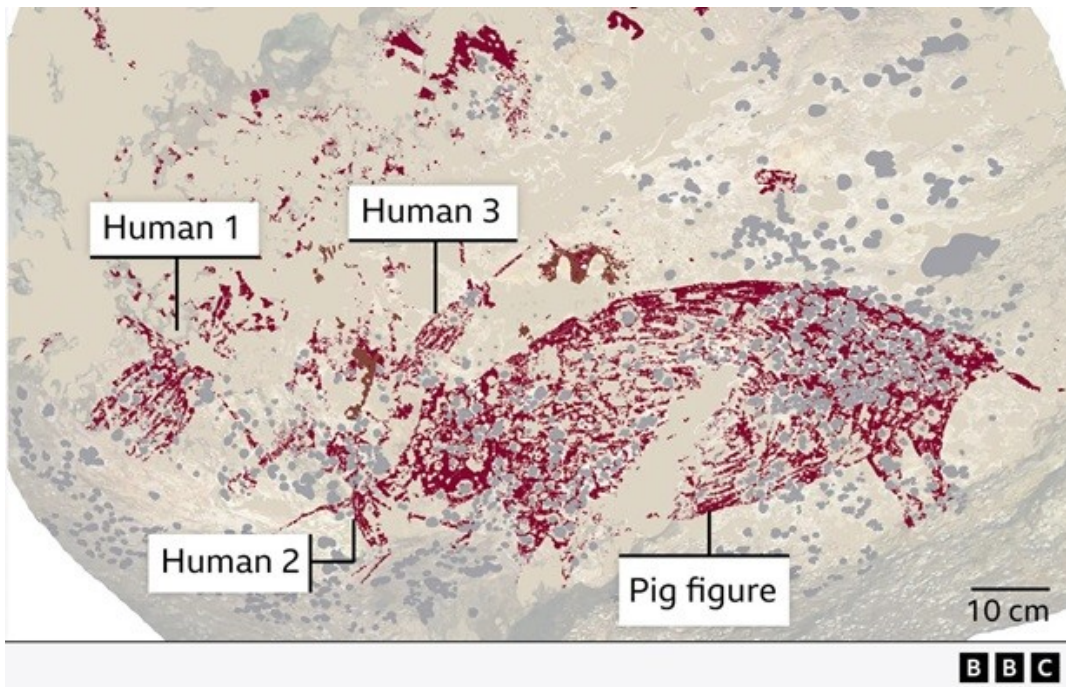
"The people who made it were fully modern, they were just like us, they had all of the capacity and the tools to do any painting that they liked," said Maxime Aubert, the co-author of the report **published in Science Advances journal**.

A dating specialist, Mr Aubert had identified a calcite deposit that had formed on top of the painting, and used Uranium-series isotope dating to determine that the deposit was 45,500 years old.

This makes the artwork at least that old. "But it could be much older because the dating that we're using only dates the calcite on top of it," he added.

Source: <https://www.bbc.com/news/articles/c0vewjq4dxwo> 3 July 2024
Pallab Ghosh Science Correspondent • [@BBCPallab](#)

The oldest example of figurative cave art has been discovered in the Indonesian Island of Sulawesi by Australian and Indonesian scientists.



The painting of a wild pig and three human-like figures is at least 51,200 years old, more than 5,000 years older than the previous oldest cave art.

The new dating was made possible using a new method which involves cutting tiny amounts of the art using a laser. This enables researchers to study different parts of the artwork in greater detail and come up with a more accurate dating.

The discovery pushes back the time that modern humans first showed the capacity for creative thought.

Prof Maxime Aubert from Griffith University in Australia told BBC News that the discovery would change ideas about human evolution.

“The painting tells a complex story. It is the oldest evidence we have for storytelling. It shows that humans at the time had the capacity to think in abstract terms,” he said

The painting shows a pig standing still with its mouth partly open and at least three human-like figures.

The largest human figure has both arms extended and appears to be holding a rod. The second is immediately in front of the pig with its head next to its snout. It also seems to be holding a stick, one end of which may be in contact with the pig's throat. The last human-like figure seems to be upside-down with its legs facing up and splayed outwards. It has one hand reaching towards and seemingly touching the pig's head.

The team of scientists was led by Adhi Agus Oktaviana, an Indonesian rock art specialist from the National Research and Innovation Agency (BRIN) in Jakarta. He says that that narrative storytelling was a crucial part of early human culture in Indonesia from a very early point in time.

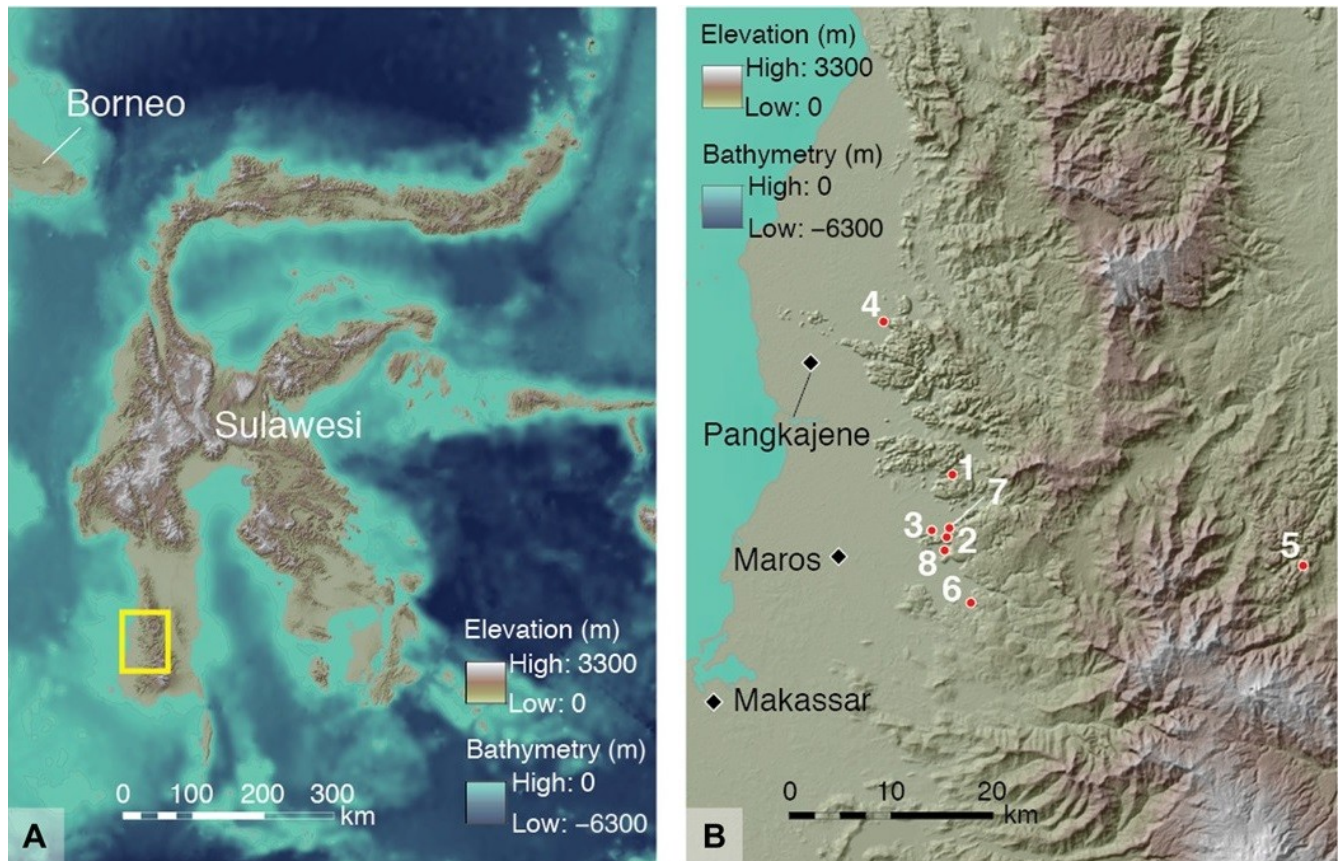
“Humans have probably been telling stories for much longer than 51,200 years, but as words do not fossilise we can only go by indirect proxies like depictions of scenes in art – and the Sulawesi art is now the oldest such evidence by far that is known to archaeology,” he said.

The new painting, in the limestone cave of Leang Karampuang in the Maros-Pangkep region of South Sulawesi, shows representational art – an abstract representation of the world around the person or people that painted it.

It therefore represents an evolution in the thought processes in our species that gave rise to art and science.

Until 10 years ago, the only evidence of ancient cave art was found in places such as Spain and Southern France. It led some to believe that the creative explosion that led to the art and science we know today began in Europe.

But the discovery of coloured outlines of human hands in South Sulawesi in 2014 shattered that view.



Source: <https://www.science.org/doi/10.1126/sciadv.abd4648>

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Fig. 1 South Sulawesi study area.

(A) The rock art sites under study are all situated in limestone karst areas in the island's southwestern peninsula [see (B) for detail of area shown inside the rectangle].

(B) Locations of limestone caves or shelters discussed in the study:

- 1, Leang Tedongnge;
- 2, Leang Timpuseng;
- 3, Leang Barugayya 2;
- 4, Leang Bulu' Sipong 4;
- 5, Gua Uhallie;
- 6, Leang Balangajia 1;
- 7, Leang Bulu Bettue; and
- 8, Leang Burung 2.

Base maps were created by M. Kottermair and A. Jalandoni.

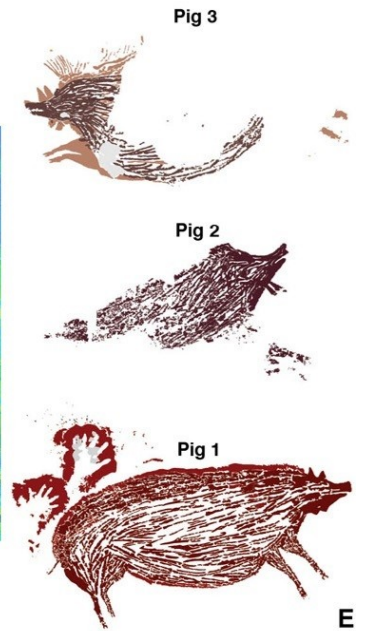
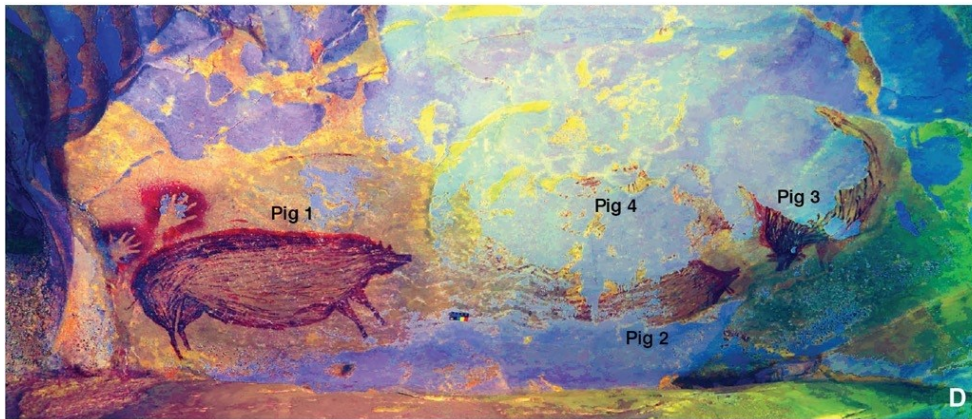
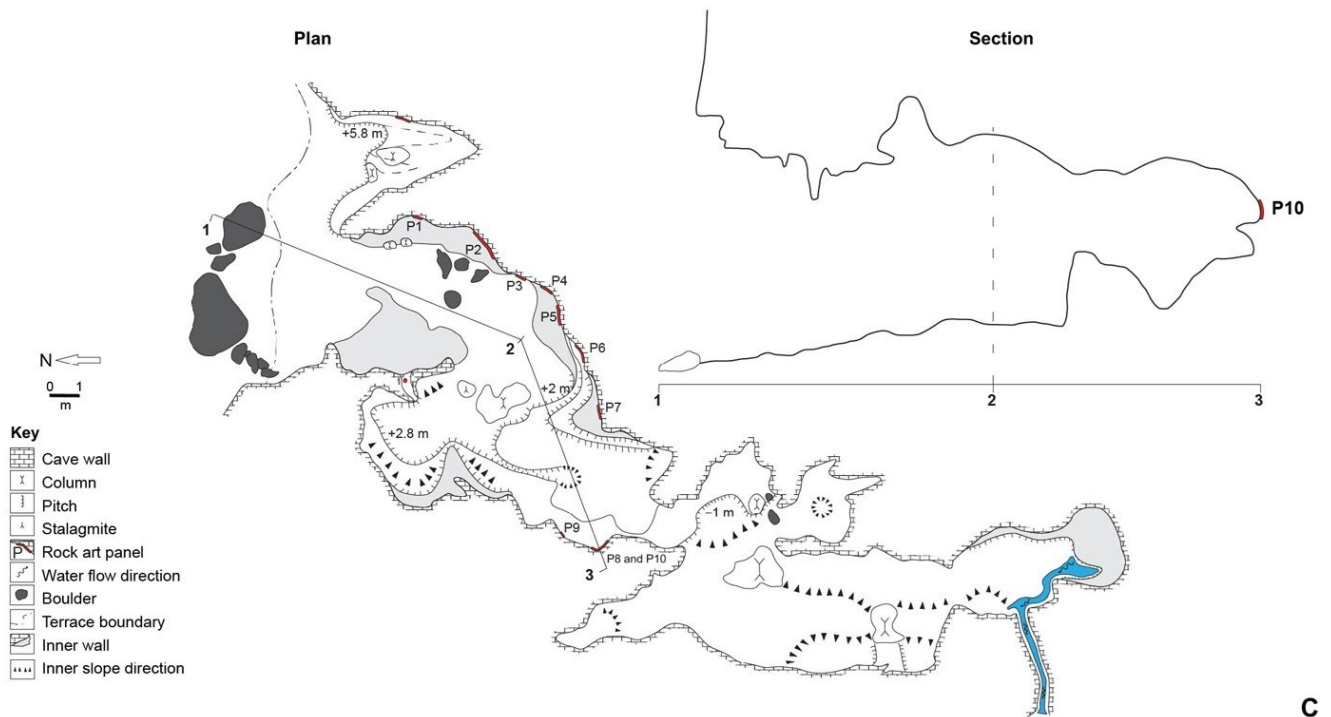


Fig. 2 Figurative paintings of pigs at Leang Tedongnge.

(A and B) Leang Tedongnge cave. The cave is located at the foot of a limestone karst hill (A); the cave mouth entrance is shown in (B).

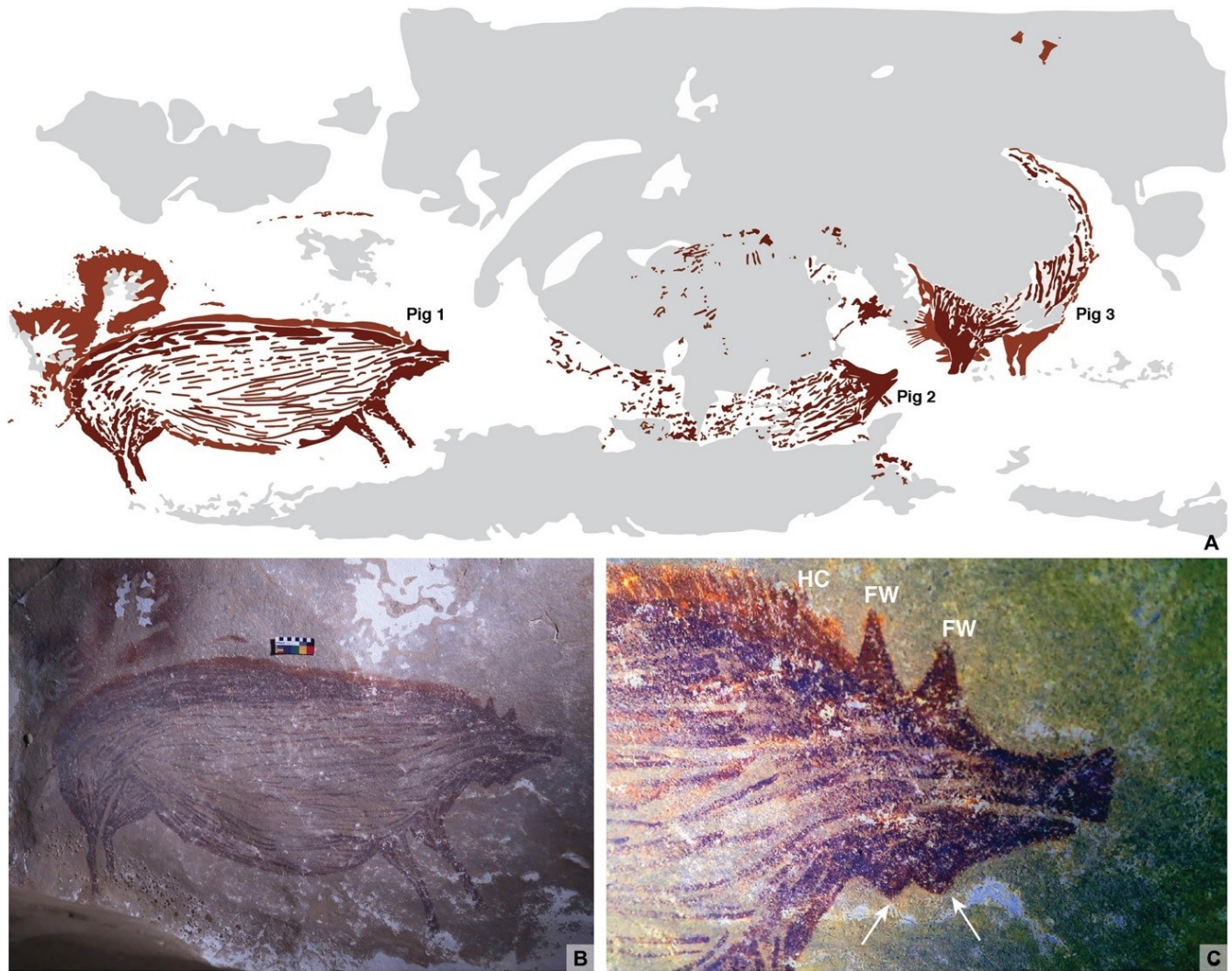
(C) Plan and section of Leang Tedongnge site. Rock art panel 10 (P10) is located on a ledge toward the rear of the cave and features at least three large figurative paintings of pigs.

(D and E) Details of rock art panel 10 showing pigs 1 to 3. Dimensions: pig 1 (136 cm by 54 cm), pig 2 (125 cm by 53 cm), and pig 3 (138 cm by 71 cm). A fourth animal figure (probably a depiction of a pig and hence provisionally denoted pig 4) was present but is too heavily exfoliated for analysis.

(D) Stitched panorama view of panel 10 after enhancing with the Decorrelation Stretch (DStretch) computer program (channel setting: _lds; LDS colorspace).

(E) Tracings of pigs 1 to 3. Pig 3 was painted using two different colors; possibly, but not certainly, with a time lapse between these painting episodes.

Photo credits: A. A. Oktaviana, ARKENAS/Griffith University.



Source: <https://www.science.org/doi/10.1126/sciadv.abd4648>

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Fig. 3 Dated pig figure (pig 1) in the rock art panel at Leang Tedongnge.

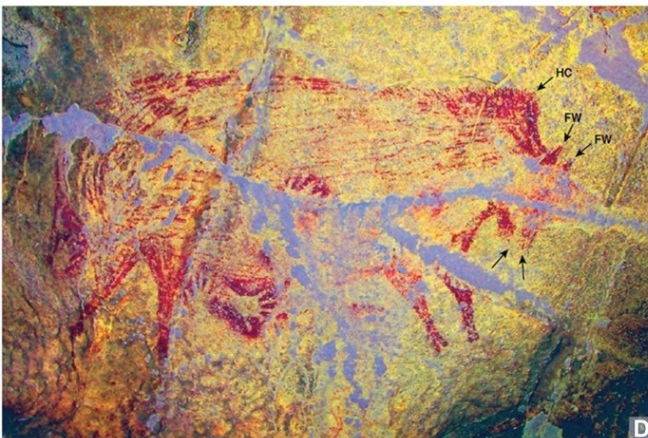
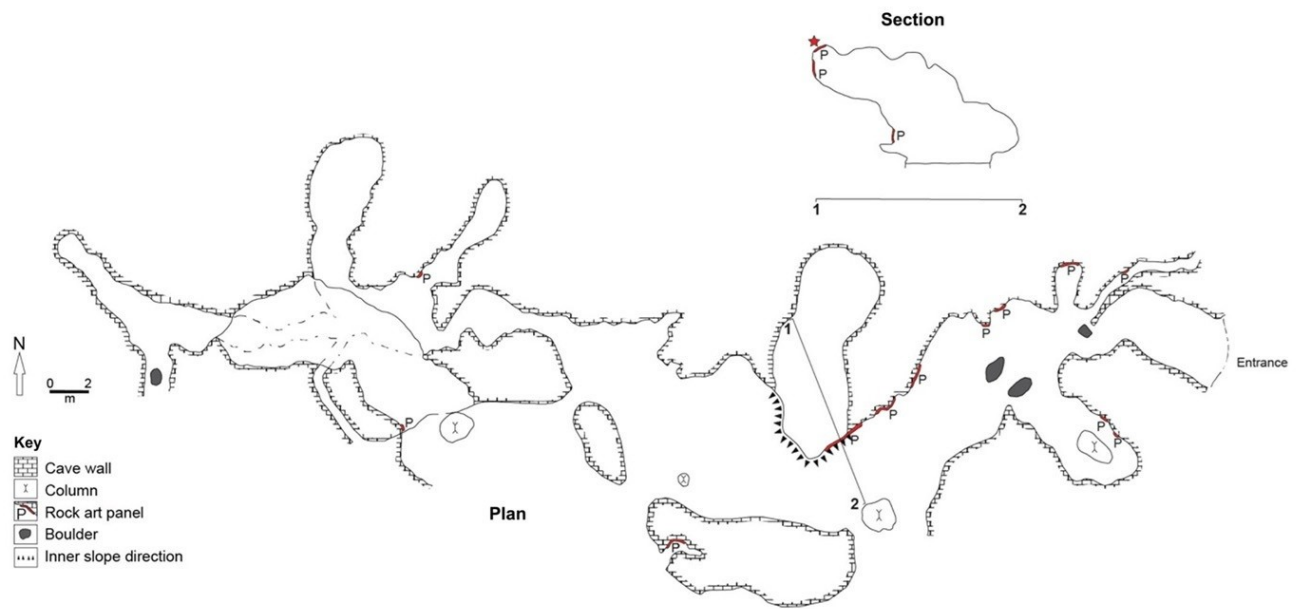
(A) Digital tracing of the rock art panel (P10).

(B) Pig 1.

(C) Detail of the head area of pig 1 [enhanced using the Decorrelation Stretch (DStretch) computer program; channel setting: `_ac_lab`; AC, auto contrast and LAB color space]. HC, head crest; FW, preorbital facial warts.

Pig 1 displays an unidentified morphological feature, a pair of teat-like protuberances in the lower neck area; these are highlighted by white arrows in (C).

Photo credits: A. A. Oktaviana, ARKENAS/Griffith University.



Source: <https://www.science.org/doi/10.1126/sciadv.abd4648>

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Fig. 4 Dated painting of a pig at Leang Balangajia 1.

(A and B) Leang Balangajia 1 cave. The cave is located in the upper karst network of a limestone hill (A); the cave entrance [concealed by dense vegetation in (A)] is shown in the photostitched panorama in (B).

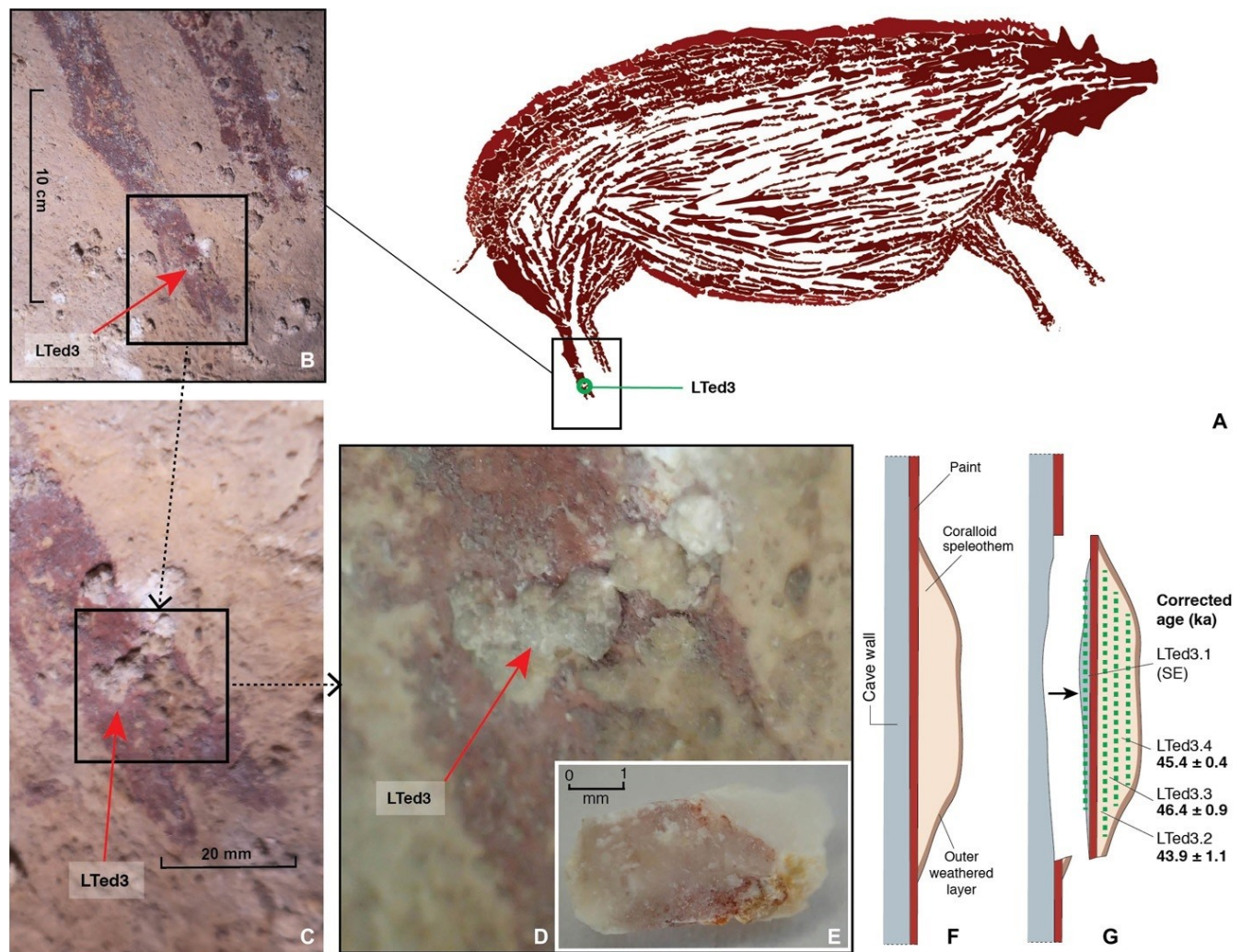
(C) Plan and section of Leang Balangajia 1 (the red star shows the location of the dated pig figure).

(D and E) Dated artwork, a large red outline profile painting of a pig.

(D) Photograph enhanced using the Decorrelation Stretch (DStretch) computer program (channel setting: `_ac_cb_lds`; AC; CB, auto image color balance; and LDS color space).

(E) Tracing (gray shading indicates exfoliated areas of the panel). The pig figure is 187 cm in length and 110 cm in height. FW, preorbital facial warts, a diagnostic characteristic of *S. celebensis*; HC, head crest. Four hand stencils (darker in color) are superimposed on the pig. The pig figure displays an unidentified morphological feature, a pair of hairy teat-like protuberances in the lower neck area [highlighted by arrows in (D) and (C)].

Photo credits: A. A. Oktaviana, ARKENAS/Griffith University.



Source: <https://www.science.org/doi/10.1126/sciadv.abd4648> Brumm A, et al. 2021

Fig. 5 U-series dating of the pig figure (pig 1) at Leang Tedongnge.

(A) Sample LTed3 comprises a coralloid speleothem overlying the figure's rear foot.

(B to D) Sample LTed3 overlying red pigment of the foot.

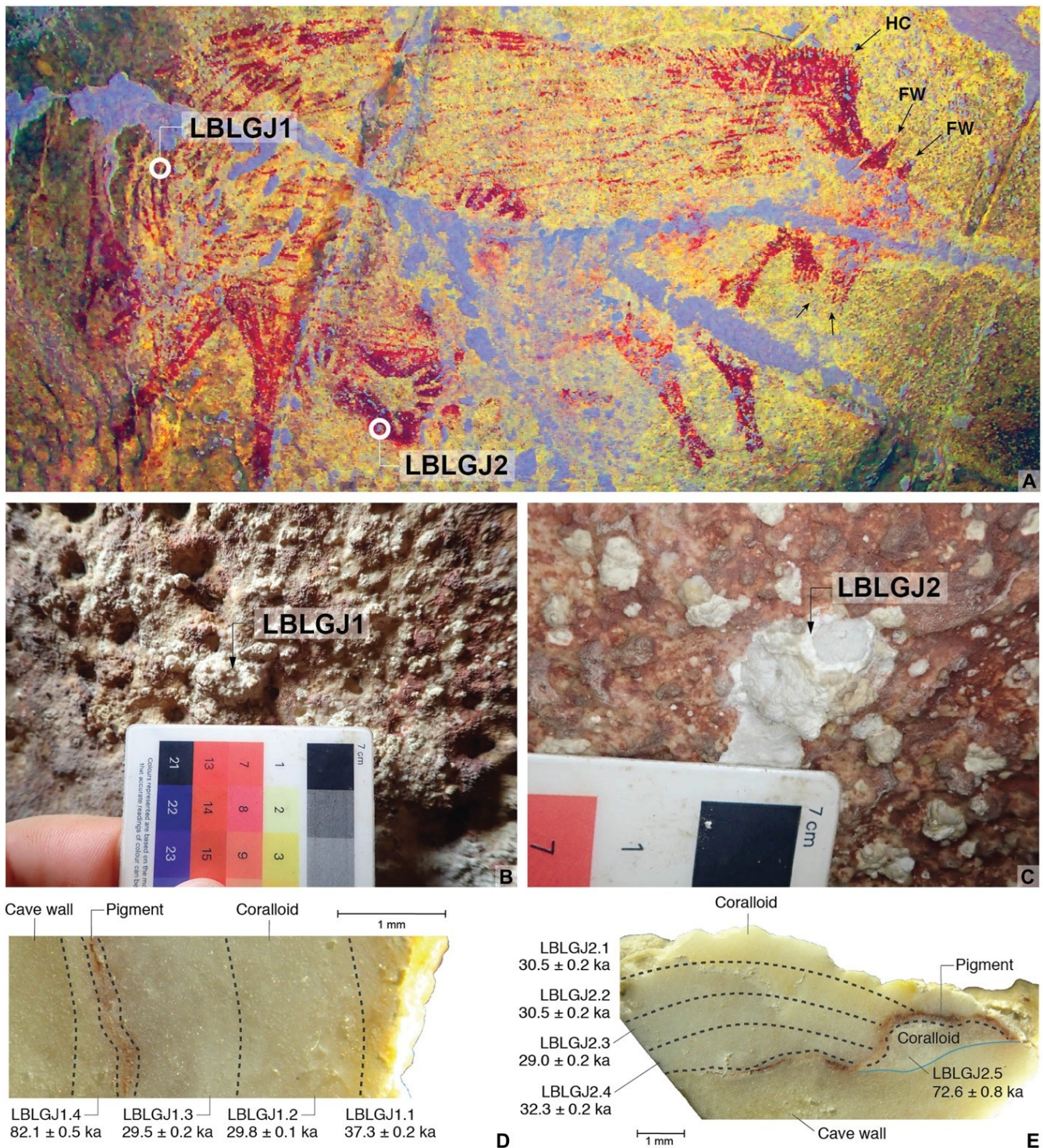
(E) Underside of sample LTed3 after removal from the rock art panel; clearly visible is the red pigment of the paint layer adhering to the base of the coralloid speleothem.

(F to G) Schematic diagrams of sample removal and dating.

(F) Sampled coralloid speleothem (LTed3) formed on top of the paint layer corresponding to the rear foot of the pig.

(G) When removed, the sampled coralloid speleothem (LTed3) took the underlying paint layer with it affixed to the base (see Materials and Methods). U-series isotope analysis was conducted on four micromilled subsamples (green dotted lines); one aliquot was collected from immediately below the pigment layer (LTed3.1), and the remaining three aliquots (LTed3.2, LTed3.3, and LTed3.4) came from progressively higher levels above (i.e., on top of) the pigment layer. SE, secular equilibrium. Uncertainties reported at 2σ . Our results indicate a minimum U-series age of 45.5 ka for this figurative image of a suid at Leang Tedongnge.

Photo credits: M. Aubert, Griffith University.



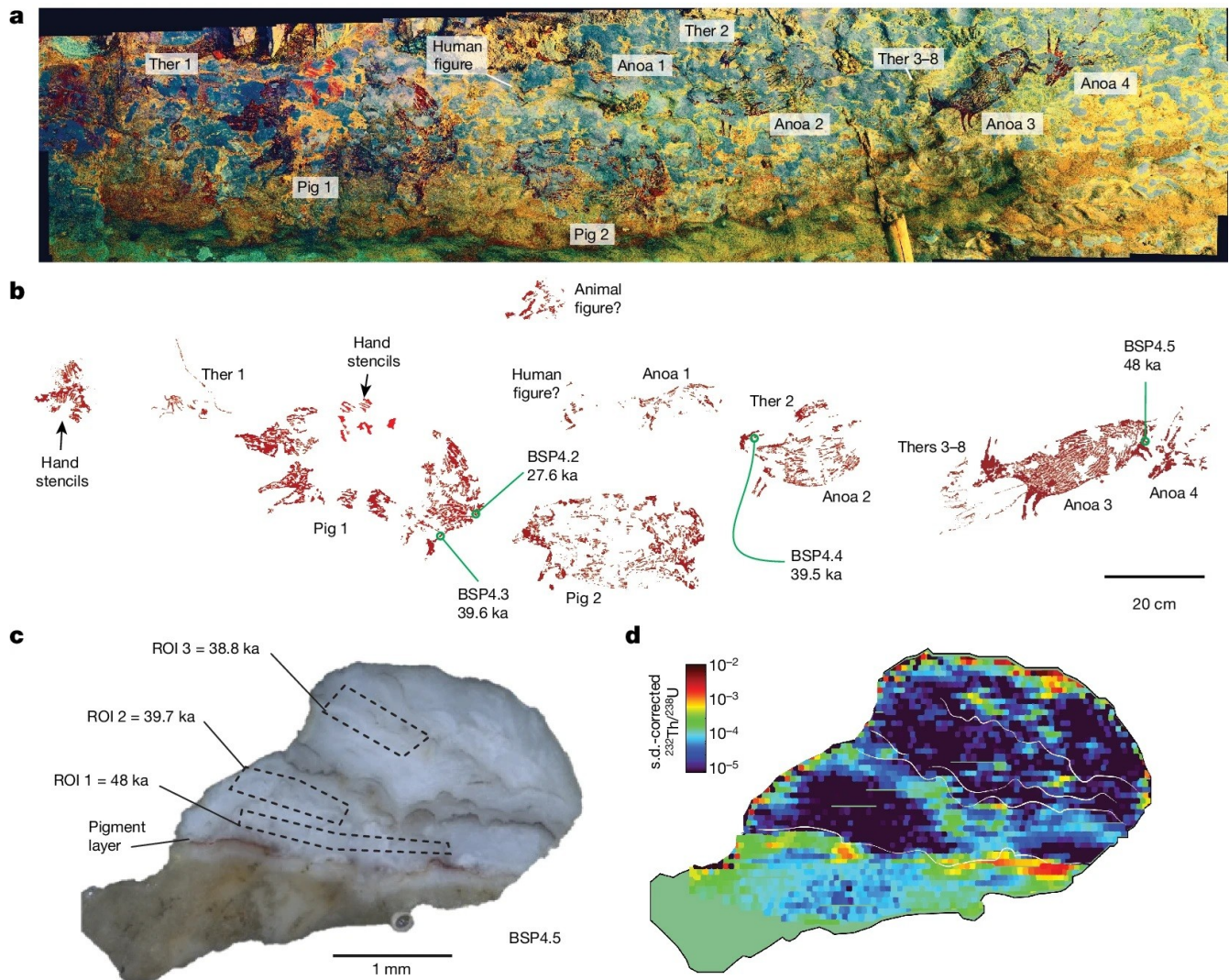
Source: <https://www.science.org/doi/10.1126/sciadv.abd4648>

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Fig. 6 U-series dating of the red pig figure at Leang Balangajia 1.

U-series isotope analysis was conducted on two small coralloid speleothems (samples LBLGJ1 and LBLGJ2) overlying the large red pig painting (A) and an overlying purple/mulberry hand stencil (A), respectively. The photograph in (A) has been enhanced using the Decorrelation Stretch (DStretch) computer program (channel setting: `_ac_cb_lds`; AC, CB, and LDS color space). Samples LBLGJ1 (~150 mm²) and LBLGJ2 (~100 mm²) are shown in situ in (B) and (C), respectively; cross sections with

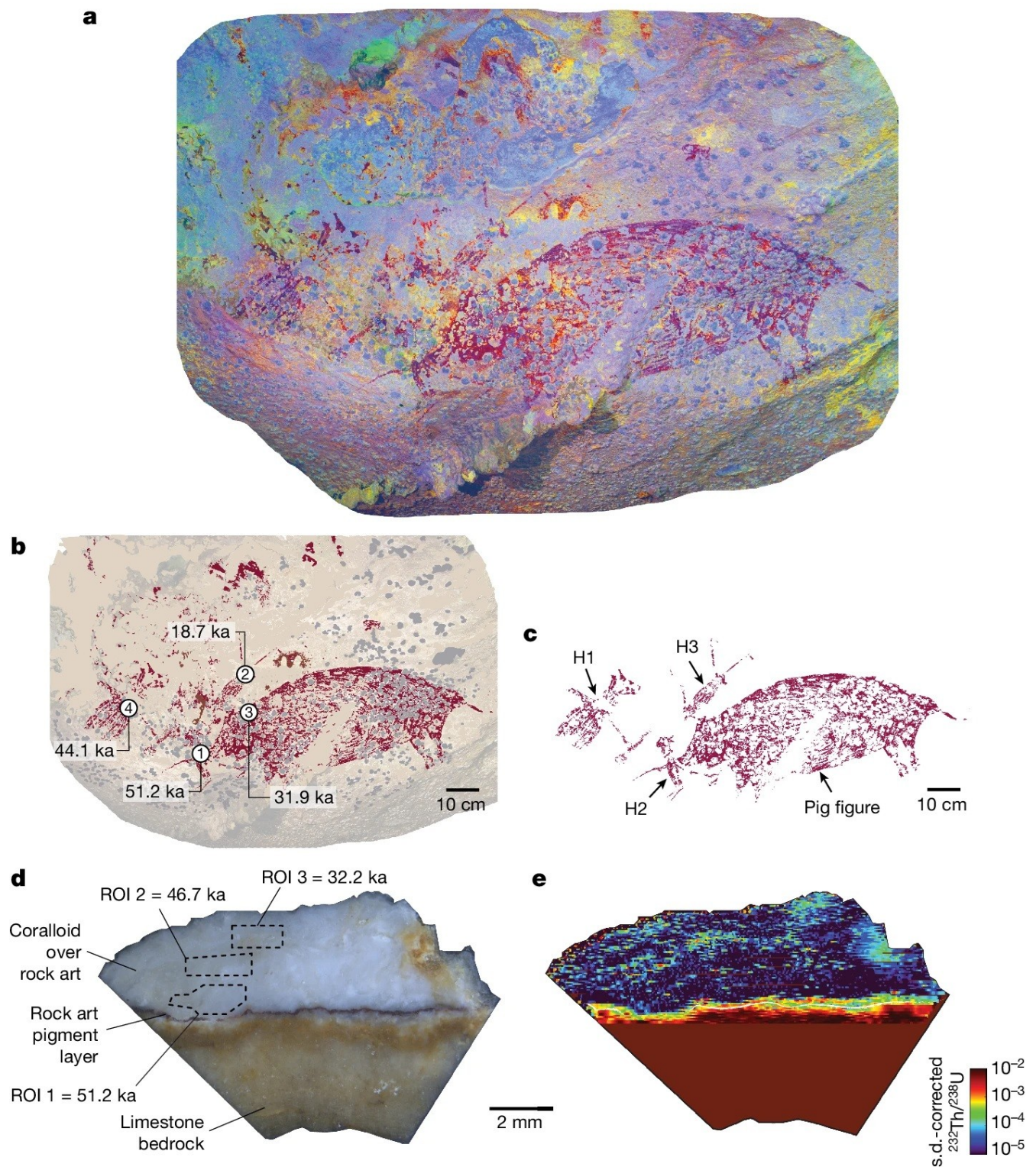
U-series dating results are shown in (D) and (E). Subsamples LBLGJ1.4 (D) and LBLGJ2.5 (E) were both collected below the pigment lines and thus provide maximum ages for the artworks. Uncertainties reported at 2σ . Our dating results indicate that the suid figure was painted between 73.4 and 32 ka. Photo credits: (A) A. A. Oktaviana, ARKENAS/Griffith University; (B to E) M. Aubert, Griffith University.



Source: <https://www.nature.com/articles/s41586-024-07541-7> Oktaviana AA, et al. 2024

Fig. 2: Dated rock art panel at Leang Bulu' Sipong 4.

(a) Photostitched panorama of the rock art panel (using photographs enhanced using DStretch_Ire). Ther, therianthrope. (b) Tracing of the dated rock art panel showing the results of LA-U-series dating. (c) Transect view of the rock art sample BSP4.5 after removal from the artwork, highlighting the paint layer and the three integration zones (ROIs) and associated age calculations. (d) LA-MC-ICP-MS imaging of the BSP4.5 $^{232}\text{Th}/^{238}\text{U}$ isotopic activity ratio.

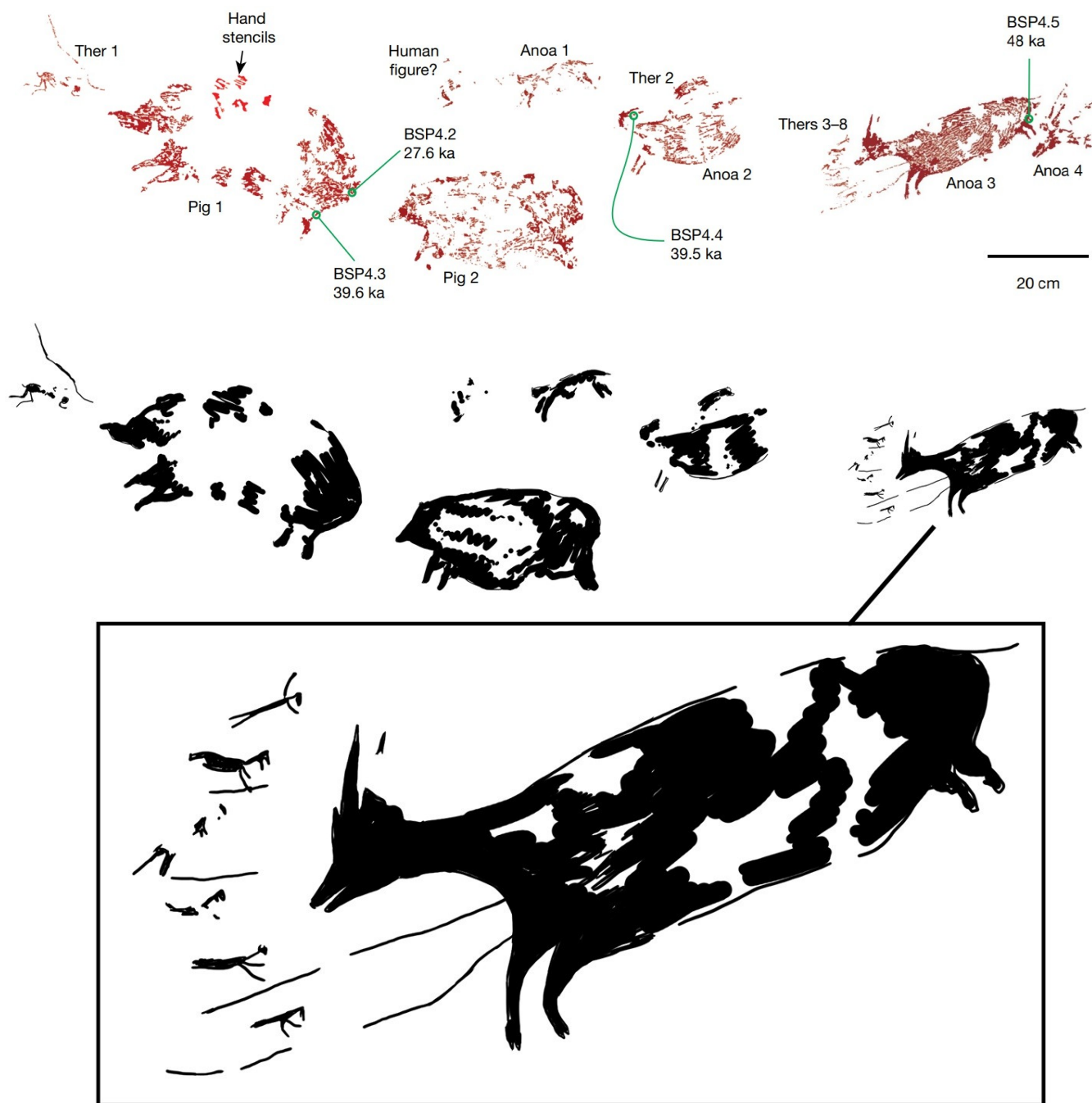


Source: <https://www.nature.com/articles/s41586-024-07541-7> Oktaviana AA, et al. 2024

Fig. 3: Dated rock art panel at Leang Karampuang.

a, Photostitched panorama of the rock art panel (with photographs enhanced using DStretch_ac_lds_cb). b, Tracing of the rock art panel showing the results of LA-U-series dating. c, Tracing of the painted scene showing the human-like figures (H1, H2 and H3) interacting with the pig. d, Transect view of the coralloid speleothem, sample LK1,

removed from the rock art panel, showing the paint layer and the three integration zones (ROIs), as well as the associated age calculations. e, LA-MC-ICP-MS imaging of the LK1 $^{232}\text{Th}/^{238}\text{U}$ isotopic activity ratio.





Hunting scene at Leang Bulu' Sipong 4. The top image shows a photostitched panorama of the rock art panel (images enhanced using DStretch). The bottom image is a digital tracing of the rock art scene.

Photo: Ratno Sardi (top) Drawing: Adhi Agus Oktaviana (bottom).



A painting discovered on the wall of an Indonesian cave has been dated at 44,000 BCE. The art appears to show a buffalo being hunted by part-human, part-animal creatures holding spears and possibly ropes.

Photo: Maxime Aubert



Cave paintings on the Indonesian island of Sulawesi were found more than 50 years ago, but until now the dates of origin were not known. The art shown here has not been dated, but is stylistically similar to other art in the area now found to be around 40,000 years old.

Photo: Maxime Aubert, Griffith University



Another painting of an Anoa, apparently a male, in the same style, and possibly even by the same artist.

Photo: Adam Brumm



Hunting scene at Leang Bulu' Sipong 4. A group of small part-human, part-animal figures is apparently capturing an anoa (a buffalo-like creature native to Sulawesi) with what seem to be ropes or spears.
Photo: Ratno Sardi



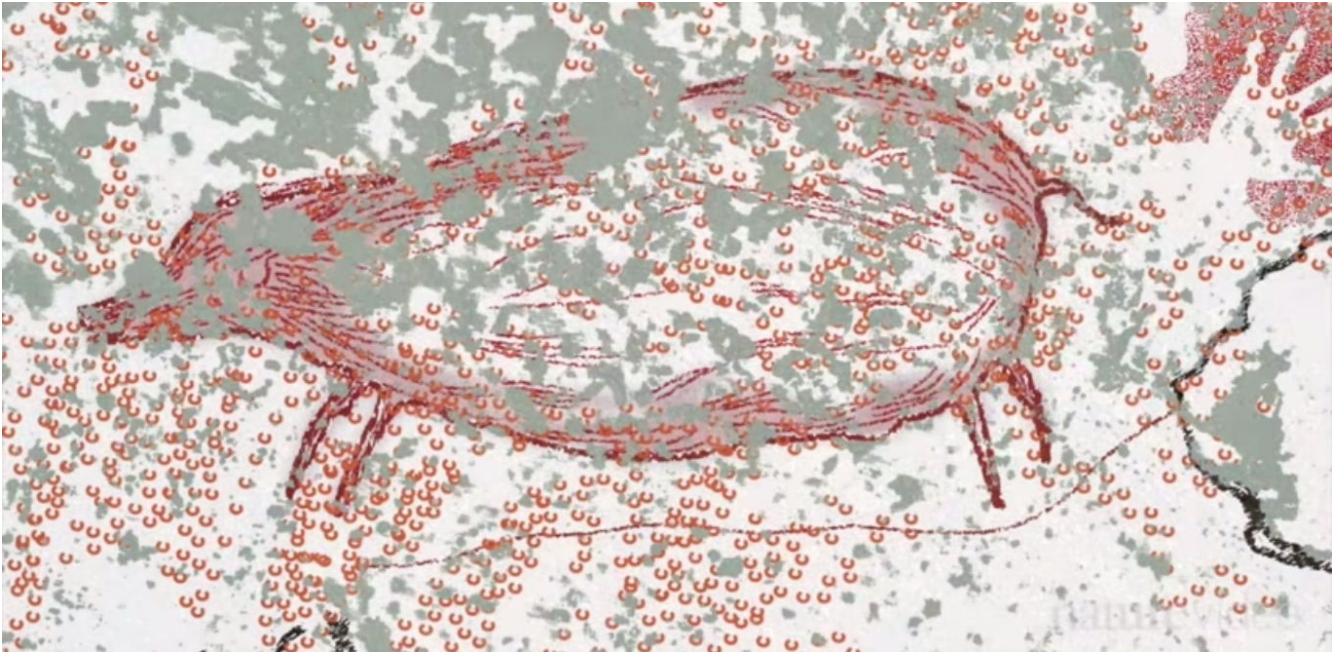
A therianthrope figure in the hunting scene at Leang Bulu' Sipong 4. This motif appears to represent a human figure with bird-like head and beak.

Photo: Ratno Sardi



Anthropoid figure hunting a pig.

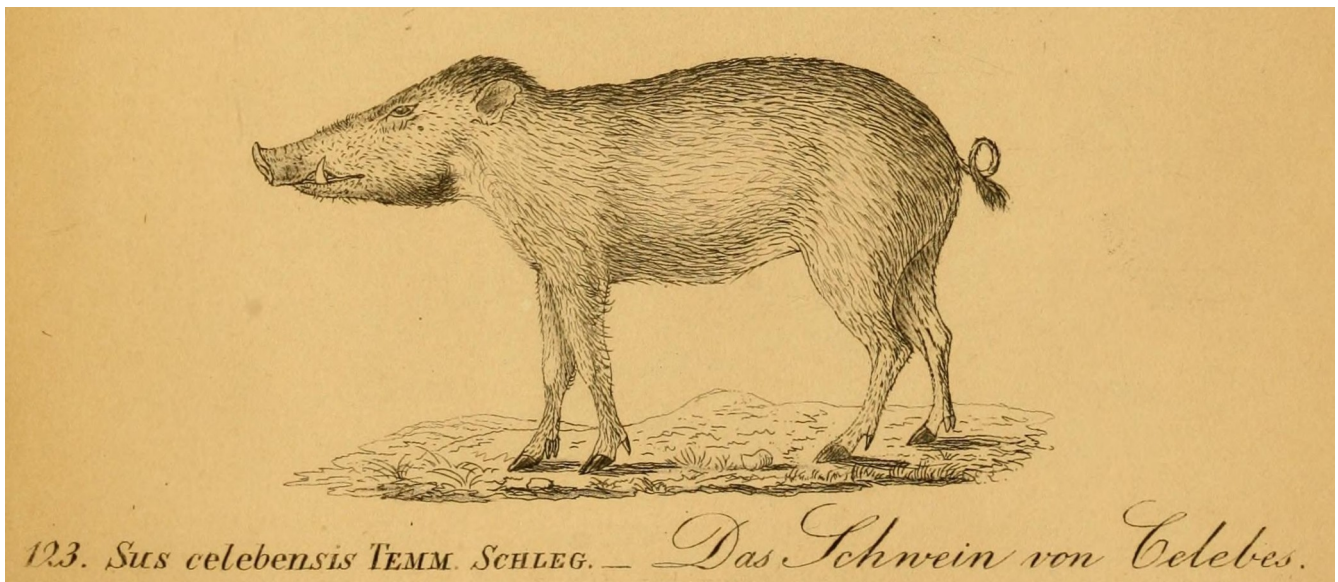
Photo: Maxime Aubert



Babirusa (pig-deer) and hand stencil.
Photo: Kinez Riza



Painting of a pig at Leang Tedongnge site in Indonesia dated to 45,000 BCE.
Photo: Maxime Aubert



Sulawesi pig painted in 1845 by Heinrich Gottlieb Ludwig Reichenbach (German, 1793-1879).