

News in focus



A limestone bust of Egypt's queen Nefertiti on display at the Neues Museum, Berlin.

IS THIS NEFERTITI'S TOMB? RADAR CLUES REIGNITE DEBATE OVER HIDDEN CHAMBERS

Survey hints at a previously unknown space beyond Tutankhamun's burial chamber.

By Jo Marchant

A radar survey of the area around the tomb of Tutankhamun in Egypt's Valley of the Kings has revealed possible evidence of further hidden chambers behind its walls.

The findings – in an unpublished report, details of which have been seen by *Nature* – resurrect a controversial theory that the young king's burial place hides the existence of a larger tomb, which could contain the burial of the mysterious Egyptian queen Nefertiti.

Researchers led by archaeologist Mamdouh Eldamaty, a former Egyptian minister of

antiquities, used ground-penetrating radar (GPR) to scan the area immediately around Tutankhamun's tomb. They report that they have identified a previously unknown corridor-like space a few metres from the burial chamber (see 'Chamber of secrets'). Their finding was presented to Egypt's Supreme Council of Antiquities (SCA) earlier this month.

The data are "tremendously exciting", says Ray Johnson, an Egyptologist at a branch of the University of Chicago's Oriental Institute in Luxor, Egypt, who wasn't involved in the work. "Clearly there is something on the other side of the north wall of the burial chamber."

The possibility of extra chambers beyond

Tutankhamun's tomb has previously been investigated by several teams, often working with private companies. But they produced conflicting results, and many researchers have dismissed the idea. For example, Francesco Porcelli, a physicist at the Polytechnic University of Turin in Italy who led a GPR survey inside the tomb in 2017, insists that his data rule out hidden rooms connected with the tomb.

Egypt's lost queen

Eldamaty's team was investigating a theory that Tutankhamun's tomb, which was discovered in 1922 and is unusually small for a royal burial, contains extensive hidden chambers

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and perhaps even Nefertiti's missing resting place. Some Egyptologists believe that immediately before Tutankhamun's reign in the fourteenth century BC, Nefertiti, whose daughter was married to Tutankhamun, briefly ruled as pharaoh. Her tomb in the Valley of the Kings has never been found.

The team detected a long space in the bedrock a few metres east of Tutankhamun's burial chamber and at the same depth, running parallel to the tomb's entrance corridor. The space appears to be around 2 metres high and at least 10 metres long.

It is not yet certain whether the space is physically linked to Tutankhamun's tomb, known as KV62, or if it is part of another nearby tomb. The researchers argue that its orientation, perpendicular to KV62's main axis, suggests that there is a connection, because unconnected tombs tend to be aligned at different angles.

But not everyone is convinced. Zahi Hawass, another former Egyptian antiquities minister, says using geophysical techniques to search for tombs has raised false hopes before, and he argues it should not be pursued at KV62. GPR "never made any discovery at any site in Egypt", he claims. Hawass is himself searching for new tombs, including that of Nefertiti, but using more conventional techniques. He told *Nature* that in 2019, he excavated north of KV62 looking for tomb entrances, but found nothing.

Contested histories

The radar survey is the latest in a succession of investigations that have tried to confirm whether additional chambers exist – delivering conflicting results.

The new data are intriguing, says Nicholas Reeves, a British Egyptologist who has spent many years working in the Valley of the Kings. But the new feature is not where he was expecting – he had assumed that possible hidden chambers would continue north of Tutankhamun's tomb rather than turn to the right, as the data suggest. However, Reeves, who first suggested the idea that there is an extension to KV62, still thinks Nefertiti will be found somewhere inside.

In a 2015 paper, he reported finding straight lines and cracks in the painted walls of Tutankhamun's burial chamber, which he suggested could indicate the presence of hidden

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doorways (see go.nature.com/2wjq2sj). In particular, he claimed that the far north wall of Tutankhamun's burial chamber isn't solid bedrock as previously understood, but is a false wall of a type commonly used by ancient Egyptian tomb builders to hide chambers beyond. From clues in the wall paintings themselves, Reeves concluded that there was a hidden occupant and that it was Nefertiti.

Following this report, Eldamaty, as antiquities minister, oversaw two GPR surveys of the tomb walls. One, conducted by a team from Japan, seemed to confirm the existence of hidden rooms. But a second team, sent by the US

media company National Geographic, failed to replicate these results.

Eldamaty was replaced as antiquities minister in 2016. The following year, his successor invited two more teams to scan the area around KV62, in the hope of settling the debate. But the disagreements continued. One team, led by Porcelli, working inside the tomb, claimed to rule out the existence of hidden chambers beyond the walls of KV62 (L. Sambuelli *et al. J. Cult. Herit.* 39, 288–296; 2019). A second team – a geophysical survey company called Terravision Exploration, based in West Molesey, UK – was asked by the SCA to cut short its survey.

Yet Terravision's preliminary results – also from inside the tomb – suggested there was more to discover. So Eldamaty, who is now based at Ain Shams University in Cairo, says he was determined that the team should complete its investigation by scanning outside the tomb. "I never give up easily," he says. The SCA approved a new application and, in June 2019, Terravision and a team from Ain Shams University returned to finish their work. However, interference from nearby air-conditioning units meant that they were unable to collect definitive data for the crucial area directly north of Tutankhamun's burial chamber.

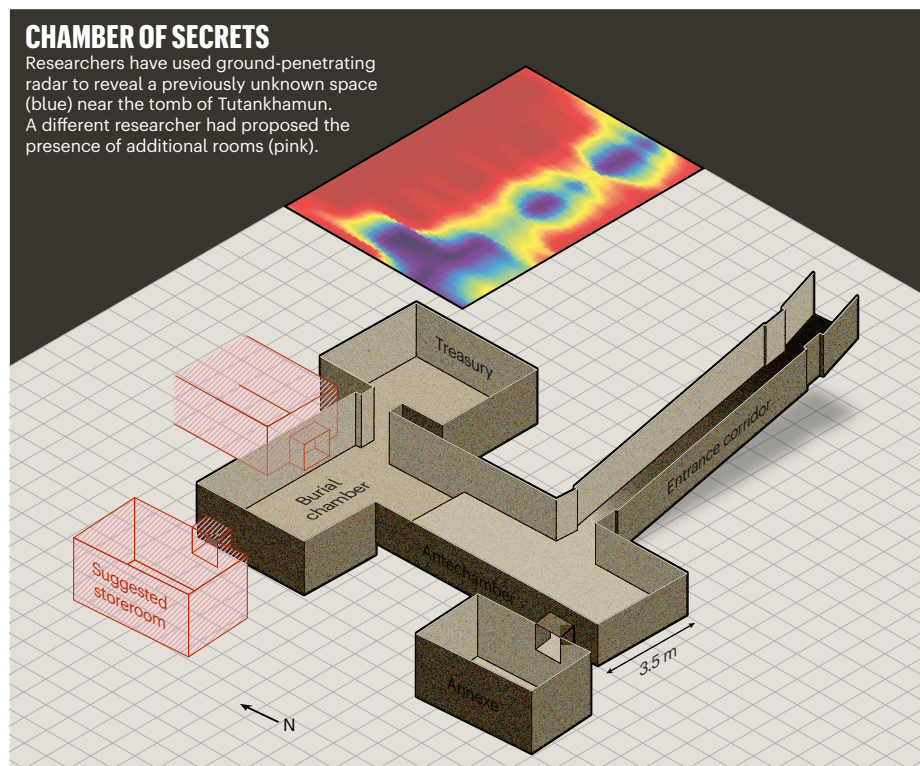
Eldamaty plans to submit a proposal to return and study the feature in more detail. It will be difficult to scan closer to the burial chamber without removing the air-conditioning units, says Terravision chief executive Charlie Williams. But he is confident that, by using a different antenna and taking readings closer together, he can pin down the shape and location of the void to within a few centimetres, and see where it leads.

Other Egyptologists have responded to the finding with enthusiasm. Johnson doesn't rule out the possibility of finding Nefertiti in the space. But if it turns out to belong to a different undiscovered tomb, he suggests it could hold Tutankhamun's wife Ankhesenamun, whose tomb has not been found.

Aidan Dodson, an Egyptologist at the University of Bristol, UK, is sceptical of Reeves's idea that Nefertiti is buried in the chamber but backs the second-tomb theory, and suggests it might hold the remains of princesses from Tutankhamun's time. Whoever is inside, he says, the find could be "amazingly significant".

Reeves has high hopes, too. "If Nefertiti was buried as a pharaoh, it could be the biggest archaeological discovery ever," he says. If the evidence continues to mount, he suggests, an international conference of experts should be convened to consider the next steps. Any physical investigation shouldn't be rushed, he says, because digging through the bedrock would be extremely difficult, and drilling through the north wall of the burial chamber would damage its priceless artwork.

Egypt's SCA did not respond to *Nature's* requests for comment.



CHAMBER OF SECRETS

Researchers have used ground-penetrating radar to reveal a previously unknown space (blue) near the tomb of Tutankhamun. A different researcher had proposed the presence of additional rooms (pink).