

“Pyramid Remodeling” Transcript

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IRA FLATOW: This is Science Friday. I'm Ira Flatow. How do you find out if there is a secret room hidden in an ancient pyramid? Not the same way you'd discover hidden places in that home you're remodeling. You just can't go busting through the walls to find out what's on the other side, right? So, how do you do it?

Case in point. A group of scientists recently suspected that there might be an undiscovered chamber hidden in the Great Pyramid of Giza. Following up on their hunch, they turned to a technique scientists use to measure the density of volcanoes to try and see if there was anything behind that earth and stone besides, well, more earth and stone. So did they find anything? The suspense is killing me, so let's find out.

Joining us to discuss this and other short subjects in science Annalee Newitz, tech culture editor at Ars Technica. Welcome back.

ANNALEE NEWITZ: Hey, thanks for having me.

FLATOW: OK, let's continue this story. So you have this room is hidden. How do they know that?

NEWITZ: So the north side of the Great Pyramid at Giza has this characteristic architectural feature that suggests that somebody might have wanted to hold up a ceiling behind the outer wall of the pyramid. So scientists thought, well, maybe there's something behind. Maybe there's a chamber behind there.

The problem is, as you said, you can't just dig it up or break into it. So what they did was they used a technique called muography. Not photography. Muography works with subatomic particles called muons that are created through collisions in the upper atmosphere and they rain down on Earth at a very regular rate. And the thing that's great about muons is they can pass through incredibly dense amounts of earth and stone, but they sometimes get absorbed the denser it gets.

And so if you go into one of the lower areas of the Great Pyramid, there's a few corridors in there that we've opened up. They went into a corridor under the area where they thought there was this possible chamber and set up plates that capture muons and left them there for three months and went back to see basically the absorption patterns of those muons to see how many were absorbed and how many got through and if there was a pattern. And they found there was a pattern that looks like there may be a void space somewhere in the pyramid right behind that architectural feature.

FLATOW: So they saw a shadow, like you would see on an X-ray instead of muons coming where X-rays would be coming in.

NEWITZ: That's right. So you're using muons instead of X-rays, and they're just coming down from the atmosphere.

FLATOW: Just to make sure that we say no cows were harmed in this experiment.

NEWITZ: That's right.

FLATOW: So what do they do now? They know it's there and they can't get in, can they?

NEWITZ: So right now the group, which is called The Scan Pyramids Mission, is hoping to get another year to do more research to basically do more muography. Because they want to make sure that what they're seeing is actually some kind of chamber instead of just the muons picking up spaces between the stones. It's possible that there's larger stones and smaller stones that have gaps between them.

So they don't want to do anything to harm this wonder of the world until they really are certain that there's something there. So first another year of gathering, and then they'll see what they're going to do next.

FLATOW: Thank you. Thank you, Annalee. Always good to have you. Annalee Newitz is a tech culture editor for Ars Technica.