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TECHNOLOGY

Ultra-rare mineral found in WA crater

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 Morgan Cox has discovered a rare mineral while reviewing old drill core samples from a crater in WA.



An extremely rare mineral that only forms when rocks from space slam into the earth's crust with immense pressure has been found in Western Australia, the sixth discovery in the world so far.

Curtin University geology student Morgan Cox was working on her thesis and testing drill core samples from the buried Woodleigh impact crater, near Shark Bay, that had been stored in a shed since 2001 when she spotted reidite.

It is the first time the mineral has been discovered in Australia.

Reidite forms when meteorites hit the earth with enough pressure to transform the common mineral zircon.

Senior research fellow Aaron Cavosie said it was a microscopic mineral and all of the known occurrences on earth would probably amount to the size of a grain of rice.

"It's such an uncommon mineral. It's always a chance discovery," Dr Cavosie told AAP.



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The research team is now using numerical modelling to refine the size of Woodleigh, and if its diameter is greater than 100km, it will be the largest-known impact crater in Australia.

The crater is buried below younger sedimentary rocks, so its size is not known and remains hotly debated.

"Previous research estimated the size of the impact crater between 60km and more than 120km in diameter," Ms Cox said.

"However, our discovery of reidite near the base of the core suggests a larger crater."

Impacts that cause craters bigger than 100km in diameter are big enough to cause mass extinctions.

The Chicxulub crater in Mexico, which was caused by an impact believed to have killed off the dinosaurs 66 million years ago, is 180km in diameter.

Dr Cavosie said the research team would also try to narrow down the age of Woodleigh, which is estimated to have been made 360 million years ago.

He said he hoped Ms Cox would inspire others to study geology.

"She's a superstar of a student," Dr Cavosie said.

"Not many years ago, Morgan was in a high school class and here she is making a major discovery.

"You can make tiny observations and make huge discoveries."

THE OTHER FIVE REIDITE FINDS:

USA - Rock Elm, about 450 million years old, 6.5km in diameter

USA - Chesapeake, 35.5 million years old, 85km in diameter

Germany - Ries, 15 million years old, 24km in diameter

China - Xiuyan, about 50,000 years old, 1.8km in diameter

Canadian Arctic Haughton impact structure (Devon Island), 39 million years old, about 23km in diameter

* Reidite has also been found in ejecta, which is material thrown out of the crater by the force of the impact, in Chesapeake and from an unknown crater in Scotland.

TOPICS

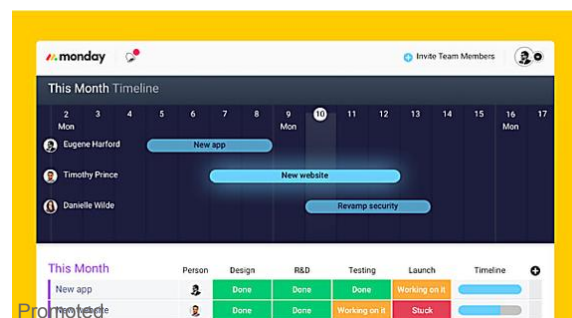
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