

Falkland Islands basin shows signs of being among world's largest craters

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A basin in the Falkland Islands exhibits traits of a large impact crater, according to a new analysis by a team of scientists. The structure measures approximately 250 kilometers, or more than 150 miles, in diameter and is described in the latest issue of the journal *Terra Nova*.

"If the Falklands [basin](#) is really an [impact crater](#), and it has some of the most telling features, then it is one of the largest known," observes Michael Rampino, a professor in New York University's Department of Biology and one of the paper's co-authors.

The researchers, who also include Max C.L. Rocca of Argentina's Planetary Society and Paraguay-based geologist Jaime Báez Presser, acknowledge that samples from the site are necessary to confirm the conclusions of the analysis.

The basin is situated on the Falkland (Malvinas) Plateau to the northwest of West Falkland (Gran Malvina) Island. Seen in seismic-reflection profiles, and in gravity and magnetic surveys, it has traits that are consistent with impact craters, which are caused by collisions with asteroids and comets. Approximately 200 such craters have been discovered on Earth.

The scientists estimate the age of the basin to be from the late Paleozoic Era—approximately 270 to 250 million years ago.

"If the proposed crater turns out to be 250 million years old, it could

correlate with the largest mass extinction ever—the Permian extinctions, which wiped out more than 90 percent of all species," observes Rampino.

He and his colleagues also point to specific features that indicate the basin is an impact crater.

They note that it is completely buried by sediments from more recent eras, which indicates it was formed long before its surroundings, and that it has no topographic expression on the present sea floor.

Key to the basin's identification as a potential impact crater are the decrease in the strength of Earth's gravity over the site, indicating a large basin filled with younger low-density sediments, and a strong increase in the strength of Earth's magnetism at the site. The latter is characteristic of large impact structures—notably, the 66-million-year-old, 200-kilometer diameter Chicxulub [impact crater](#) discovered in the Yucatan in the late 1970s.

Provided by New York University

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