AWI SCIENTISTS DISCOVER POSSIBLE METEORITE IMPACT SITE



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During their stay at the Princess Elisabeth station, researchers from the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI) in Germany, have discovered a possible meteorite impact site during an aerial geological survey mission to study the geological history of Antarctica.

A new discovery

On December 20th, while on mission aboard AWI's Polar 6 aircraft over the Princess Ragnhild Coast, geophysicis Müller from Fielax (a company supporting the survey), looked out of the window of the aircraft and spotted an un in the ice over the King Baudoin Ice Shelf.

"About 5 or 6 kilometres away from the aircraft, I saw a massive circular structure about 2 kilometres across," Dr explained. "I wondered what could have created such a large feature in the ice."

After returning to the Princess Elisabeth station, which AWI is using as a base of operations for the Polar 6's surve season, Dr Müller decided to have a look into the scientific literature. He wanted to know if there might be a recor of impact event that happened in the vicinity of the King Baudoin Ice Shelf in recent years.

Digging deeper

After a bit of research, he found two separate studies to support the idea that the circular scar in the ice shelf could created by a falling meteor.

A study done by American and Canadian researchers using infrasound recordings (recordings of sound below the hearing) from several sources, including Germany's Neumayer Station III, concluded that a large body likely fell t vicinity of the King Baudoin Ice Shelf in East Antarctica in 2004. In a separate study, scientists at Australia's Dav observed a dust trail high up in the atmosphere consistent with a trail left by a falling meteor. The Australians estim falling object would have touched down in the area of the ice shelf.

"There are two lines of inquiry that support the hypothesis of an impact event," affirmed Graeme Eagles, geophysi AWI's geophysical survey team based at the Princess Elisabeth station this season. "If the structure is indeed the r impact, we would expect it to have undergone about 10 years of alteration by processes such as snow accumulatio wind, and deformation by the flow of the ice shelf itself."

Six days after its initial discovery, AWI scientists conducted a more detailed aerial survey of the circular feature in taking photos and videos, and collecting laser altimeter and radar data mapping the feature's contours in detail.

Further investigation needed

While current evidence points to a possible meteorite impact site, the AWI team is cautious to say for certain whet kilometre-wide circular scar in the ice shelf was indeed caused by a large meteorite. AWI's experts in Bremerhave the data the team in Antarctica has collected, and further investigation is needed.

And as the AWI team in Antarctica was sent there to conduct a geophysical survey of Antarctica's bedrock to inve continent's geological history, and not a meteorite impact site, they don't have the means to conduct any thorough investigation at the moment.

"If we could generate a plausible argument that this might have been the site of an impact, then we'd like to return in-situ work," Dr Eagles explained. "We'd certainly bring in more people to widen the range of expertise."

More research at the site might include drilling into ice shelf to see if there is further evidence of a meteorite impa However it will have to wait. "We have to finish the survey we came out here to do," Dr Eagles said. "This circula have to go on the back burner until then."

A full interview with AWI survey team leader and geophysicist Graeme Eagles is available on www.sciencepoles.c