



The University of Edinburgh

News Release

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Antarctic rocks help uncover clues about sea level changes

Ancient rocks embedded in the West Antarctic ice sheet could help scientists improve predictions of rising sea levels.

Researchers will use sensor technology and chemical analysis to measure the cosmic radiation – energy from exploding stars in space – to which the half-a-million-year-old rocks have been exposed during their entire lifespan.

Their findings will indicate whether the ice sheet melted at the warmest point between the two most recent global ice ages, some 120,000 years ago, when sea levels rose by up to six metres. Melting ice would have exposed the rocks to more cosmic radiation than if they had remained embedded in the ice sheet, where they are now.

The research, led by the University of Edinburgh, will shed light on whether the ice sheet played a role in rising sea levels between the ice ages.

Understanding how the West Antarctic ice sheet behaved between ice ages will enable scientists to improve their models of past climates. This in turn enables more accurate predictions of how sea levels will change as climates continue to warm.

The three-year study will be funded by the Natural Environment Research Council and will be carried out in collaboration with the Universities of Northumbria and Exeter, Scottish Universities Environmental Research Centre, the University of Cologne, and the British Antarctic Survey.

Dr David Sugden of the University of Edinburgh's School of GeoSciences, who will lead the research, said: "Studying these half-a-million-year-old rocks will help us discover whether they have always been where they are now – stuck in the ice sheet – or if the ice sheet melted in warmer climates. This will help us predict whether we are heading for major sea level rises in the next century or so, as we head toward warmer climates."

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