



News

For the attention of: news editors

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Supervolcanoes can wake up fast

An Open University scientist who has spent the last four years studying a supervolcano in New Zealand has made a discovery which has critical implications for volcanic monitoring and hazard mitigation worldwide.

In predicting super eruptions, it is usually assumed the time between previous eruptions is a reliable indicator. However, research published by the Open University's Dr Bruce Charlier and colleagues has found that the time period for the production of magma below a supervolcano is much shorter than the interval between eruptions.

"The devastation caused by the eruption of supervolcanoes is of the same magnitude as all but the largest meteorite impacts. Eruption of hundreds to thousands of cubic kilometres of lava can cause climate change and mass extinction.

"Our findings mean that we have to reassess our understanding of the speed at which the volcano can reactivate, and this has important implications for volcanic monitoring and hazard mitigation at Taupo and similar volcanoes worldwide," says Dr Charlier.

The study of Lake Taupo supervolcano in the central North Island of New Zealand has found that the common perception that the rhyolitic magma (molten rock) is held in a huge 'vat' beneath the volcano for hundreds of thousands of years prior to a large eruption is incorrect.

The study shows that magma is produced rapidly (in one case over only a few years at most) and that even the largest eruption, such as the one that formed Lake Taupo, 26,500 years ago, had a build-up time of only about 40,000 years – a short time-period geographically speaking.

The time periods over which the magma accumulated before each eruption have been calculated by measuring the ages of zircon crystals that were growing in the rhyolitic magma. The ages of successive growth bands of the zircons indicate that some zircon crystals were growing during successive episodes of magma formation. It is the age succession that can be observed in cross-sections of zircons that has led to a new model of magma production, which allows the regeneration of material from earlier periods of the volcano's life back into its 'engine room', the magma chamber.

This study of Lake Taupo volcano is the most comprehensive study of its type, and is published in the *Journal of Petrology*.

Editor's Notes

The face of The Open University is changing as its community of students, staff, alumni and supporters begins to see the University using its new-style logo.

While the new logo will appear on everything from stationery to course materials over the next two years, it's more than just this visible difference that the Open University community will notice. The updated logo is one in a series of changes that the largest university in the UK is making to keep it at the forefront of distance learning in higher education.

A new ten-point strategy – OU Futures – promises to provide even better service to students. Its priorities include fair access for all, an increased pace of innovation, international expansion and greater local presence throughout the UK. There can hardly be a street in the UK that does not have an OU alumnus, student or staff member within its homes.

Resources

Web

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