

Study: Americas, Asia will join to form a supercontinent around the North Pole

A new study by Yale University scientists predicts that Asia and the Americas will merge into a supercontinent, Amasia, in 50 million to 200 million years.

[Talia Ralph](#) February 8, 2012 16:16



Scientists from Yale University have predicted that the earth's land masses will join in a new supercontinent called Amasia. (Gabriel Bouys/AFP/Getty Images)

In 50 million to 200 million years, Asia and the Americas will merge and form a supercontinent reminiscent of Pangaea, [according to a new study by Yale University scientists](#).

The study, published in [Nature journal](#), predicts that Africa and Australia will join together as well. This shift in geography is expected to be the next joining of the Earth's land masses since 300 million years ago, when the continents were thought to have merged into a supercontinent called Pangaea, [BBC News reported](#).

Researchers have long thought that this new continent, often referred to as Amasia, would form either in the same location as Pangaea (over the Atlantic near present-day Africa) or on the other side of the earth near the equator, [the New York Times reported](#). However, the study suggests that Amasia will actually form over the Arctic Ocean.

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“The fusion of North and South America together will close the Caribbean Sea and meet Eurasia at the present-day North Pole,” Ross Nelson Mitchell, a geologist at Yale University and one of the study's researchers, told the Times. “And Australia is moving north, and would probably snuggle to join Asia somewhere between India and Japan.”

The scientists studied the magnetism in ancient rocks in order to map where they were positioned; then, they measured how the material moves the continents, [Discovery News reported](#).

Mitchell and his colleagues believe that Amasia's future location is part of a pattern, according to the study. Pangaea formed at about 90 degrees to the previous supercontinent, Rodinia, and Rodinia at about 90 degrees to Nuna, which existed around 2 billion years ago.

"We can understand past environments better if we know exactly where they were," Dr David Rothery, a geologist, told BBC News. "I don't think as a European I care whether continents are going to converge over the North Pole or whether Britain crashes into America in the far future. Predicting into the future is of far less concern than what happened in the past."

<http://www.globalpost.com/dispatch/news/business-tech/120208/study-yale-americas-asia-supercontinent-amasia>

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America and Eurasia 'to meet at north pole'

By Neil Bowdler Science and health reporter, BBC News
How the new continent of Amasia might look



Source: Nature

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America and Eurasia will crash into each other over the North Pole in 50-200 million years time, according to scientists at Yale University.

They predict Africa and Australia will join the new "supercontinent" too, which will mark the next coming together of the Earth's land masses.

The continents are last thought to have come together 300 million years ago into a supercontinent called Pangaea.

Details [are published in the journal Nature](#).



An impression of the "supercontinent of Pangaea" some 300 million years ago

The land masses of the Earth are constantly moving as the Earth's tectonic activity occurs. This generates areas such as the Mid-Atlantic Ridge, where Iceland has formed, and areas such as that off the coast of Japan, where one plate rides over another.

Geologists believe that, over billions of years, these shifting plates have driven the continents together periodically, creating the hypothesised supercontinents of Nuna 1.8 billion years ago, Rodinia a billion years ago, and then Pangaea 300 million years ago.

The next supercontinent has already been given the working title of Amasia, as it is expected to involve the convergence of the Americas and Asia.

What the researchers have set out to do is predict when and where it will form by looking back at where its predecessors emerged.

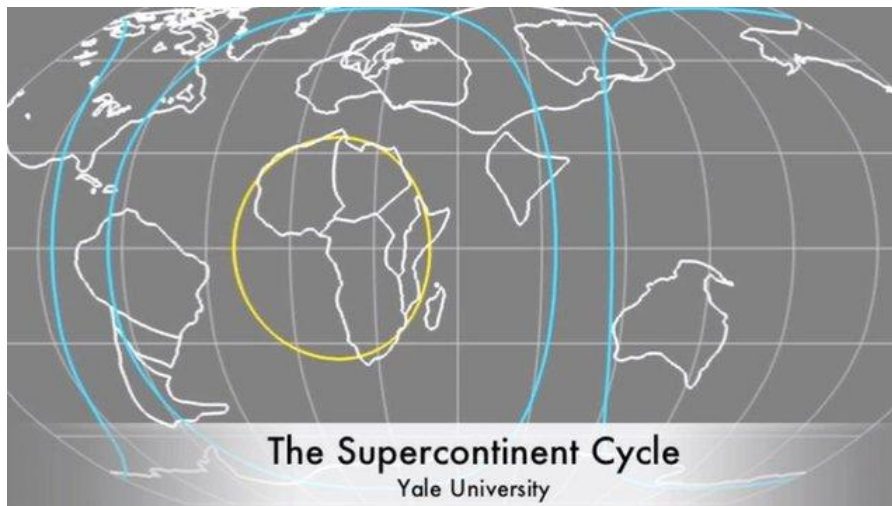
"We're all pretty familiar with the concept of Pangaea, but there hasn't been much convincing data to suggest how the supercontinents take shape," Ross Mitchell of Yale University told BBC News.

"In our model, we actually have North America and South America joining by closing the Caribbean Sea and the Arctic Sea closing and connecting the Americas and Asia."

'Better insight'

The model puts the repositioned Americas within what is known as the Pacific "ring of fire". Europe, part of the Eurasian land mass, Africa and Australia are predicted to join the merging continent, with only Antarctica left out.

The prediction is based on analysis of magnetic data locked into rocks around the world which betray the magnetic orientation of those rocks in past ages.



An animation showing plate motions for the past 500 million years and the rise and fall of the previous supercontinent Pangaea

"Ancient rocks when they form, whether it's lava cooling or sedimentary rock solidifying, will lock in the magnetic orientation," explained Mr Mitchell. "But while this indicates latitude very accurately, historically we haven't had indicators of longitude."

"We found that after each historical supercontinent had assembled, this whole supercontinent would undergo a series of back-and-forth rotations about a stable axis on the equator."

This led them to the view that that each successive supercontinent forms 90 degrees away from its predecessor. Previous studies have suggested supercontinents would form either in the same part of the globe or on alternating sides of the globe.

Commenting on the paper, Dr David Rothery, a geologist with the Open University, said the new research offered us a better insight into the history of our planet.

"We can understand past environments better if we know exactly where they were," he told BBC News. "I don't think as a European I care whether continents are going to converge over the

North Pole or whether Britain crashes into America in the far future. Predicting into the future is of far less concern than what happened in the past."

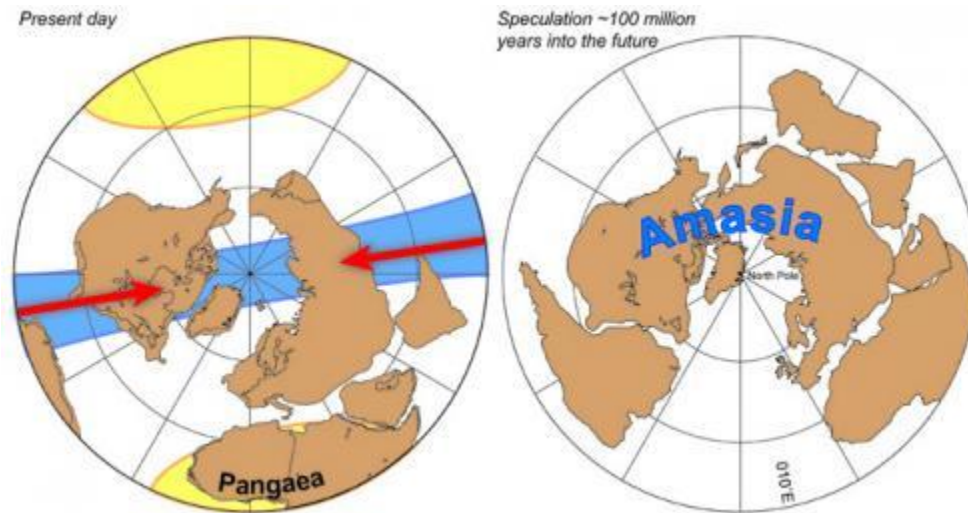
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[Study: Americas + Europe + Asia Will Form Amasia, a Supercontinent in the Arctic](#)



Geological analysis suggest the current-day continents we know and love will drift together, forming a new supercontinent like ones that existed many millions of years ago. What's not certain is *where* that supercontinent will be. The authors of a new [Nature study](#) suggest that the next supercontinent, dubbed Amasia, will join together up in the Arctic. Antarctica, though, would stay by its lonesome in the south.

The Yale scientists analyzed the formation of two earlier supercontinents, [Rodinia](#) and [Pangaea](#), and found that the continents had rotated 90 degrees between one supercontinent and the next one. They calculated these rotations based on the alignment of magnetic material in ancient rocks. Before lava solidifies into rock, the tiny shards of magnetic material point to align with the Earth's North Pole at the time—a magnetic snapshot of the past that can tell us how continents have since rotated. Rotate 90 degrees away from the last supercontinent, Pangaea, and that puts Amasia near the North Pole. However, this contradicts previous models proposing that Amasia will be either exactly where Pangaea was or directly 180 degrees across from it.

Of course, none of us will be around to verify any of these hypotheses: According to the new model, Amasia is not due to emerge for another 100 million years.

[via [CS Monitor](#)]

Image and video courtesy of Ross Mitchell, Nature

<http://blogs.discovermagazine.com/80beats/2012/02/09/americas-europe-asia-amasia-the-next-supercontinent-to-form-in-arctic/>

Asian, American continents about to collide (in 50 million years or so)

A team of Yale geologists predict that Asia and the Americas will smash into each other, forming a new supercontinent dubbed 'Amasia.'

By [Trevor Quirk](#), Contributor / February 9, 2012

Continents are ancient puzzle pieces. It's easy to mentally reassemble the prehistoric supercontinent Pangea when we note how snugly [South America](#) fits along [Africa](#)'s shore. But scientists have long debated exactly how this process unfolds, over hundreds of millions of years. The answer will allow them to predict what future supercontinents may look like.

Ross Mitchell, a geologist at [Yale University](#), and his colleagues have recently proposed a new model of how supercontinents form. By measuring the ancient magnetism of geological samples, researchers speculate that the next supercontinent, which geologists call 'Amasia', will not form on the equator, but around the [North Pole](#).

Traditionally, there have been two competing theories on how supercontinents form. The first, known as extroversion, states that Pangea fissured into continents (like [North America](#)), separated, and will someday form a new supercontinent – Amasia – on the other side of the world. The other model, called introversion, predicts that the continents will slow their drift and then collapse back together around the same area that Pangea originally formed.

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Mitchell and his colleagues collected an array of geological samples and measured their magnetic orientation, essentially how the rocks aligned themselves with the magnetic poles of the Earth. Minerals lose their ability to magnetically align at specific temperatures, called the Curie temperature. For most minerals this temperature is scorchingly high. The Curie temperature of iron is around 1,400 degrees Fahrenheit. But many rocks are born in these extreme temperatures, and as they drop below their Curie Temperature their magnetic alignments become locked in place.

The Yale team sampled rocks of different ages, and saw how these frozen alignments changed over billions of years. Since all the rocks would have been oriented toward the Earth's poles, they could attribute any change in alignment to the motion of the continents. They then used this information to construct a new model of how supercontinents formed.

The new theory – called orthoversion – states that the continents will drift towards the North Pole instead of toward the equator or back to their starting points. The position of Amasia will be

angled at 90 degrees from where Pangea once was. The geologists also found that the model helps explain how supercontinents that preceded Pangea had formed.

Peter Cawood, a geologist at [St. Andrews University](http://www.st-and.ac.uk/), commended the new theory in a recent February article of Nature, saying that, before orthoconvergence, geologists "...weren't quite sure whether there was method in the madness as you went from one [supercontinent] to the other."

<http://www.csmonitor.com/Science/2012/0209/Asian-American-continents-about-to-collide-in-50-million-years-or-so>

America and Asia will join up



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