

Australia on path to join supercontinent 'Amasia'

April 28 2015, by Teresa Belcher



The latest supercontinent, Pangea, (pictured) which existed roughly between 320 million years ago (Ma) and 170Ma broke up and created the Atlantic, Indian and Southern Ocean. Credit: Dennis S Hurd

The possibility that Earth could have a supercontinent that would occupy two-thirds of the planet's surface in a couple of hundred million years' time is just one of the geological projects being investigated by an international team of academics.

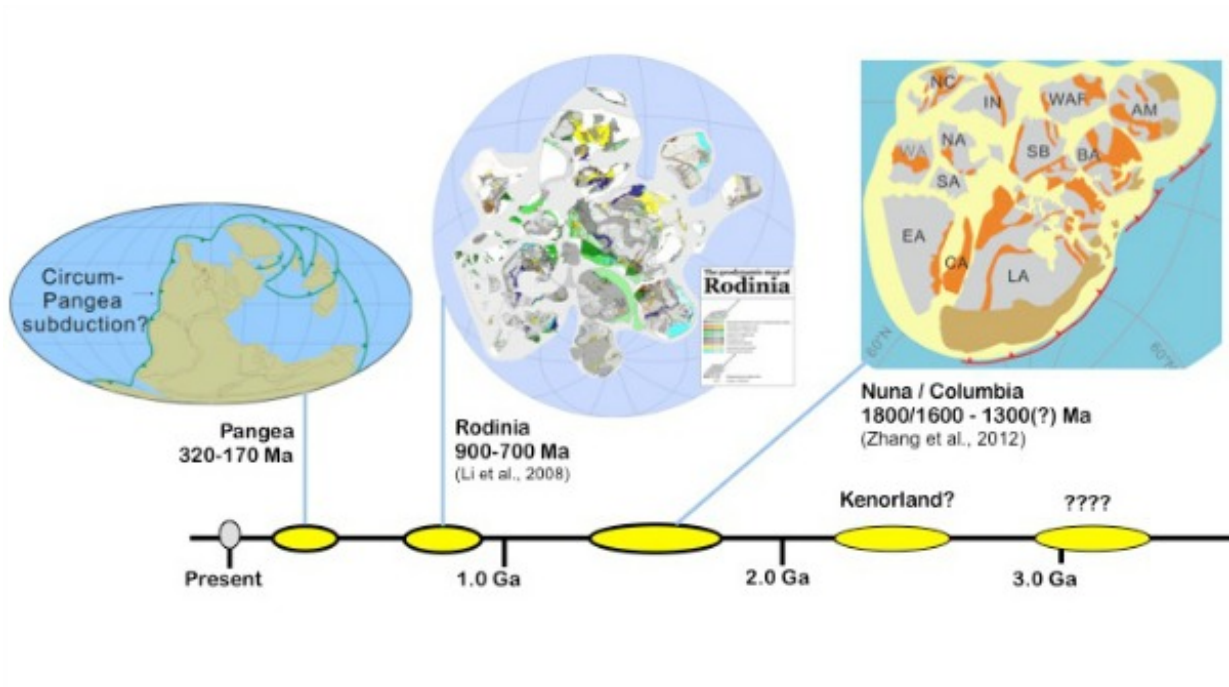
The five-year project is sponsored by UNESCO and the International Union for Geological Sciences (IUGS) and will investigate the Earth's evolutionary 'supercycles' involving both tectonic plates and its deep mantle.

Curtin University Institute of Geoscience Research (TIGeR) geologist Professor Zheng-Xiang Li will work with project co-leaders Yale University Professor David Evans, University of Colorado Professor Shijie Zhong and University of Saskatchewan Professor Bruce Eglington.

"The project will assemble a multidisciplinary team of hundreds of scientists and research students from around the world to establish new concepts, tools, maps and global databases to assist the modelling of global changes and the discovery of new Earth resources," Prof Li says.

Twenty years ago Prof Li was involved in uncovering the evolutionary history of Rodinia which is the precursor to the well-known supercontinent Pangea.

"Global GPS measurements of plate motions tell us that the Atlantic Ocean has been [and still is] widening by a few centimetres a year, whereas the Pacific Ocean is becoming narrower at a similar rate," Prof Li says.



Professor Li's 2015 compilation of the evolution of supercontinents.

"If such a trend continues, within the next one or two hundred million years, the Pacific Ocean would close up to bring the Americas to collision with the Eurasian continent while the Australian continent is set to join this future supercontinent 'Amasia', by moving around seven centimetres per year toward Asia."

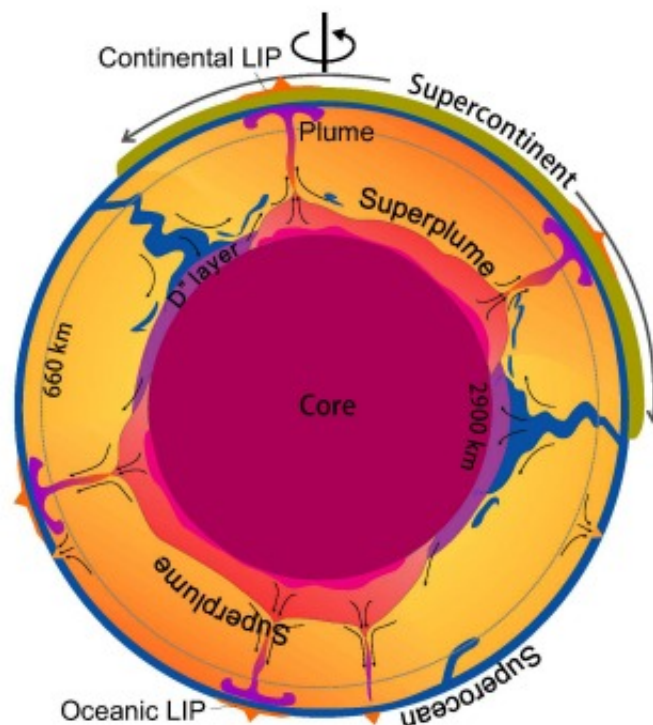
Prof Li says scientists only realised in the last 25 years that there appears to be a 500-700 million year supercontinent cycle.

"Such a supercontinent cycle is likely to be accompanied by major overturn events in the Earth's mantle which some call superplume events," he says.

"We will mainly model how the [tectonic plates](#) interact with the deep

Earth in a dynamic way, present and in the past, with cyclic supercontinents and superplumes possibly being the consequence of such a dynamic system," he says.

The latest [supercontinent](#), Pangea, which existed roughly between 320 million years ago (Ma) and 170Ma broke up and created the Atlantic, Indian and Southern Ocean.



Geodynamic model, Li and Zhong (2009).

Scientists then started to realise that there were likely pre-Pangea supercontinents.

Rodinia existed 900–700Ma, while Nuna or Columbia probably came together between 1800 Ma and 1600 Ma and broke up after 1400 Ma.

More information: The project "Supercontinent Cycles and Global Geodynamics" was approved by UNESCO-IUGS's IGCP Scientific Board in March and will be launched at an international conference at Montreal in early May.

Provided by Science Network WA

Citation: Australia on path to join supercontinent 'Amasia' (2015, April 28) retrieved 12 May 2024 from <https://phys.org/news/2015-04-australia-path-supercontinent-amasia.html>

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