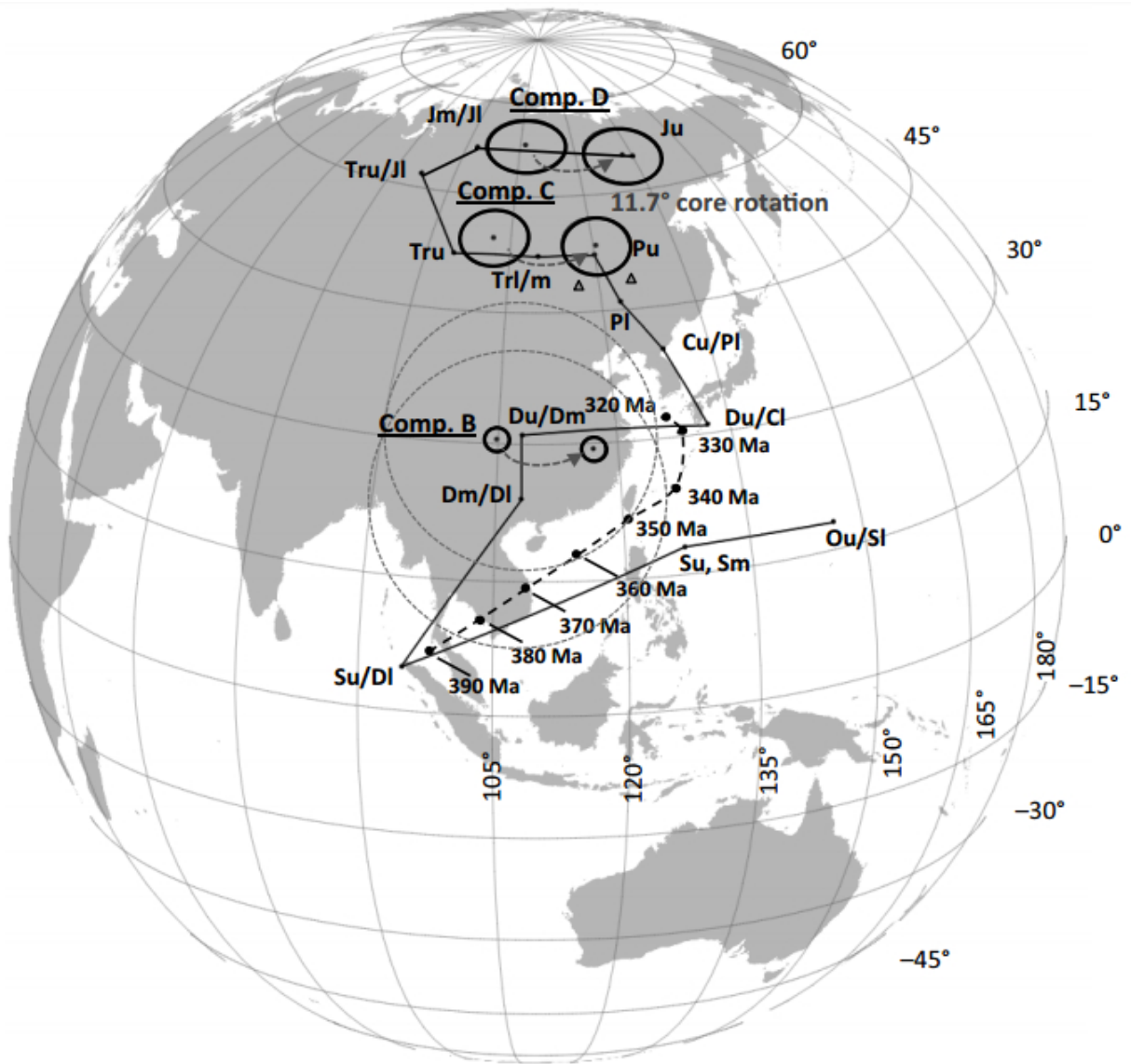


Filling in gaps in the history of earth's magnetic field

December 9 2015



Paleomagnetic poles from paleomagnetic directions: Comparison of paleopoles

from components A, B, and C from the Marcellus Formation with the apparent polar wander path for North America during the Devonian from Van der Voo (1990, solid line) and Cocks and Torsvik (2011, dashed line). Credit: GSA Bulletin and D. Minguéz et al.

Boulder, Colo., The Marcellus Shale is famous as a formation being explored for natural gas resources. That exploration has also offered some insight into an age-old problem: where was the continent of North America 400 million years ago?

In a research partnership between Lehigh University and The Pennsylvania State University, subterranean rock samples have been used to help fill a gap in the history of Earth's magnetic field, and, as a corollary, places some constraints on the position of North America when the Marcellus Formation was deposited.

Geologists use the magnetizations of rocks, acquired during their formation to determine the positions of continents relative to Earth's magnetic field. The magnetic record for the Devonian Period (ending roughly 360 million years ago) is rather patchy. This study shows that the Marcellus Formation (of Devonian age), and others like it may be able to fill in those gaps.

More information: Paleomagnetism of the Oatka Creek Member of the Marcellus Formation: A Devonian paleopole for North America, D. Minguéz *et al.*, <http://dx.doi.org/10.1130/B31291.1>.

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