Science - Geology; Findings in Geology Reported from University of Texas Austin (Reconstructing Source-to-sink Systems From Detrital Zircon Core and Rim Ages)

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2022 JUL 5 (NewsRx) -- By a News Reporter-Staff News Editor at Life Science Weekly -- Investigators publish new report on Science - Geology. According to news reporting from Austin, Texas, by NewsRx journalists, research stated, "Grenville-age (1.3-0.9 Ga) zircons represent one of the most ubiquitous detrital zircon (DZ) age modes on Earth. In North America, given the widespread occurrence of Grenville basement, Grenville DZs are commonly viewed as nondiagnostic with regard to source region in provenance studies."

Financial support for this research came from State of Texas Advanced Resource Recovery Program and Quantitative Clastic Laboratory in the **Bureau of Economic Geology** of the Jackson School of Geosciences (University of Texas at Austin).

The news correspondents obtained a quote from the research from the University of Texas Austin, "Systematic recovery of DZ core-rim U-Pb ages makes it possible to identify and differentiate previously indistinguishable basement source terranes by leveraging their multistage tectono-magmatic evolution. Our analysis demonstrates that Grenville DZs exhibit distinct rim ages in different parts of the North American Paleozoic Appalachian-Ouachita-Marathon foreland. Whereas Grenville DZ grains in the eastern foreland, sourced from the southern Appalachian orogen in the eastern United States, exhibit Taconian and Acadian (490-350 Ma) rims, grains in the western foreland, derived from Mexico, mainly show Neoproterozoic (750-500 Ma) rim ages. This difference permits differentiation of non-diagnostic core ages by their distinctive rim ages. Furthermore, core-rim paired ages can illuminate potential genetic relationships among coexisting age components in DZ spectra, thereby indicating whether the DZs are derived from separate sources or from a single source with multistage tectono-magmatic histories."

According to the news reporters, the research concluded: "Thus, DZ rim-core ages can provide critical insights into reconstructing global source-to-sink systems and elucidating genetic linkages within multistage orogenic systems."

This research has been peer-reviewed.

For more information on this research see: Reconstructing Source-to-sink Systems From Detrital Zircon Core and Rim Ages. Geology, 2022;50(6):691-696. Geology can be contacted at: Geological Soc Amer, Inc, PO Box 9140, Boulder, CO 80301-9140, USA.

Our news journalists report that additional information may be obtained by contacting Li Liu, University of Texas Austin, Jackson School of Geosciences, Dept. of Geological Sciences, 2275 Speedway C9000, Austin, TX 78712, United States. Additional authors for this research include Daniel F. Stockli, Lisa D. Stockli, Timothy F. Lawton, Jie Xu, Majie Fan and Gregory C. Nadon.

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