

---

**Geospheres; Findings from State University of New York Yields New Data on Geospheres (Vein Fluorite U-pb Dating Demonstrates Post 6.2 Ma Rare-earth Element Mobilization Associated With Rio Grande Rifting)**

554 words

20 December 2019

Science Letter

SCLT

697

English

© Copyright 2019 Science Letter via NewsRx.com

2019 DEC 27 (NewsRx) -- By a News Reporter-Staff News Editor at Science Letter -- Investigators discuss new findings in Geospheres. According to news originating from Stony Brook, New York, by NewsRx correspondents, research stated, "Numerous studies have documented rare-earth element (REE) mobility in hydrothermal and metamorphic fluids, but the processes and timing of REE mobility are rarely well constrained. The Round Top laccolith in the Trans-Pecos magmatic province of west Texas, a REE ore prospect, has crosscutting fractures filled with fluorite and calcite along with a variety of unusual minerals."

Financial supporters for this research include Stony Brook University (SBU) Undergraduate Research and Creative Activities Program (URECA), Jackson School of Geosciences, State of Texas Advanced Resource Recovery (STARR) program through the University of Texas at Austin, **Bureau of Economic Geology**, Mineral Resource Program, GEOPREP (National Science Foundation grant), Department of Energy (DOE) Geosciences, DOE, DOE Office of Science, National Science Foundation-Earth Sciences, National Aeronautics and Space Association, Department of Energy, Geosciences, National Science Foundation.

Our news journalists obtained a quote from the research from the State University of New York, "Most notably among these is an yttrium and heavy rare-earth element (YHREE) carbonate mineral, which is hypothesized to be lokkaite based on elemental analyses. While the Round Top laccolith is dated to 36.2 +/- 0.6 Ma based on K/Ar in biotite, U-Pb fluorite and nacrite ages presented here clearly show the mineralization in these veins is younger than 6.2 +/- 0.4 Ma (the age of the oldest fluorite). This discrepancy in dates suggests that fluids interacted with the laccolith to mobilize REE more than 30 m.y. after igneous emplacement. The timing of observed REE mobilization overlaps with Rio Grande rift extension, and we suggest that F-bearing fluids associated with extension may be responsible for initial mobilization. A later generation of fluids was able to dissolve fluorite, and we hypothesize this later history involved sulfuric acid."

According to the news editors, the research concluded: "Synchrotron spectroscopy and laser ablation-inductively coupled plasma-mass spectrometry (LA-ICP-MS) U-Pb dating of minerals that record these fluids offer tremendous potential for a more fundamental understanding of processes that are important not only for REE but other ore deposits as well."

For more information on this research see: Vein Fluorite U-pb Dating Demonstrates Post 6.2 Ma Rare-earth Element Mobilization Associated With Rio Grande Rifting. *Geosphere*, 2019;15(6):1958-1972. *Geosphere* can be contacted at: Geological Soc Amer, Inc, PO Box 9140, Boulder, CO 80301-9140, USA.

The news correspondents report that additional information may be obtained from G. Piccione, State University of New York, Dept. of Geoscience, Stony Brook, NY 11794, United States. Additional authors for this research include E.T. Rasbury, S.J. Jaret, P. Northrup, K. Wooton, B.A. Elliott, J.R. Kyle, A.S. Acerbo, A. Lanzirotti and R.R. Parrish.

Keywords for this news article include: Stony Brook, New York, United States, North and Central America, Geospheres, State University of New York.

Our reports deliver fact-based news of research and discoveries from around the world. Copyright 2019, NewsRx LLC

Document SCLT000020191220efck0005q