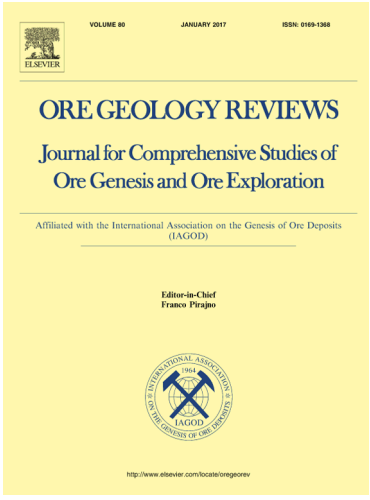

Isotope geochemistry and geochronology of the Niujuan silver deposit, northern North China Craton: Implications for magmatism and metallogeny in an extensional tectonic setting

Yu-Jie Li, Sheng-Rong Li, M. Santosh, Xuan-Xue Mo, Kaibo Gao, Yuan Ma

PII: S0169-1368(17)30208-1
DOI: https://doi.org/10.1016/j.oregeorev.2017.10.004
Reference: OREGEO 2362

To appear in: *Ore Geology Reviews*

Received Date: 17 March 2017
Revised Date: 4 October 2017
Accepted Date: 5 October 2017

Please cite this article as: Y-J. Li, S-R. Li, M. Santosh, X-X. Mo, K. Gao, Y. Ma, Isotope geochemistry and geochronology of the Niujuan silver deposit, northern North China Craton: Implications for magmatism and metallogeny in an extensional tectonic setting, *Ore Geology Reviews* (2017), doi: https://doi.org/10.1016/j.oregeorev.2017.10.004

Isotope geochemistry and geochronology of the Niujuan silver deposit, northern North China Craton: Implications for magmatism and metallogeny in an extensional tectonic setting

Yu-Jie Li[a,b], Sheng-Rong Li[a,b], M. Santosh[b,c], Xuan-Xue Mo[b], Kaibo Gao[a,b], Yuan Ma[a,b]

[a]State Key Laboratory of Geological Processes and Mineral Resources, China University of Geosciences, Beijing 100083, China

[b]School of Earth Science and Resources, China University of Geosciences, Xueyuan Road, Haidian District, Beijing 100083, China

[c]Department of Earth Sciences, University of Adelaide, Adelaide SA 5005, Australia

Corresponding author: LI Sheng-Rong (E-mail: lisr@cugb.edu.cn; Tel.:+86-010-82321732)

Abstract

The Niujuan breccia-type silver deposit forms part of the North Hebei metallogenic belt along the northern margin of the North China Craton. The Hercynian Baiyingou coarse-grained granite and the Yanshanian Er'daogou fine-grained granite are the major Mesozoic intrusions exposed in this region. Here we investigate the salient characteristics of the mineralization and evaluate its genesis through zircon U-Pb and fluorite Sm-Nd age data, and Pb, S, O, H, He and Ar isotope data. The orebodies of the Niujuan silver deposit are hosted in breccias, which contain angular fragments of the Baiyingou and Er'daogou granitoids. The $\delta^{34}S$ values of pyrite from the silver mineralized veins range from 2.4‰ to 5.3‰. The $^{206}Pb/^{204}Pb$,