

Accepted Manuscript

Primary sulfur isotope signatures preserved in high-grade Archean barite deposits of the Sargur Group, Dharwar Craton, India

Élodie Muller, Pascal Philippot, Claire Rollion-Bard, Pierre Cartigny, Nelly Assayag, Johanna Marin-Carbonne, Ram Mohan, Srinivasa Sarma

PII: S0301-9268(16)30231-5
DOI: <http://dx.doi.org/10.1016/j.precamres.2017.04.029>
Reference: PRECAM 4746

To appear in: *Precambrian Research*

Received Date: 28 June 2016
Revised Date: 31 March 2017
Accepted Date: 11 April 2017

Please cite this article as: E. Muller, P. Philippot, C. Rollion-Bard, P. Cartigny, N. Assayag, J. Marin-Carbonne, R. Mohan, S. Sarma, Primary sulfur isotope signatures preserved in high-grade Archean barite deposits of the Sargur Group, Dharwar Craton, India, *Precambrian Research* (2017), doi: <http://dx.doi.org/10.1016/j.precamres.2017.04.029>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Primary sulfur isotope signatures preserved in high-grade Archean barite deposits of the Sargur Group, Dharwar Craton, India

Élodie Muller^{1*}, Pascal Philippot¹, Claire Rollion-Bard¹, Pierre Cartigny¹, Nelly Assayag¹, Johanna Marin-Carbonne², Ram Mohan³ and Srinivasa Sarma³

¹*Institut de Physique du Globe de Paris, Sorbonne Paris Cité, Université Paris Diderot, UMR 7154 CNRS, F-75005 Paris, France*

²*Université Lyon-UJM-Saint Etienne, UMR 6524 CNRS UBP-IRD, 42023 Saint Etienne, France*

³*National Geophysical Research Institute, Uppal Road, Hyderabad, 500007, India*

*Corresponding author: Institut de Physique du Globe de Paris, 1 rue Jussieu, 75238 Paris cedex 05, France, emuller@ipgp.fr, Tel. +33 1 83 95 73 92

ABSTRACT:

We report *in situ* and bulk S-isotope analyses of the 3.2 Ga old barite deposit of the Sargur Group, Dharwar Craton, India. Compared with the two other coeval barite deposits in Western Australia (Pilbara Craton, Warrawoona and Sulfur Springs Group) and South Africa (Kaapvaal Craton, Onverwacht and Fig Tree Group), the rocks of the Sargur Group have experienced pervasive ductile deformation and equilibrated under high-grade metamorphic conditions, which could have caused partial S-isotope re-equilibration. However, *in situ* techniques revealed high spatial heterogeneities in $\delta^{34}\text{S}$ of up to $\sim 18\%$ in barite-bearing pyrites, as well as similar $\Delta^{33}\text{S}$ anomalies compared to the associated sulfate indicating bacterial sulfate reduction isotope effects and a minor impact of the pervasive ductile deformation and metamorphism on the

Download English Version:

<https://daneshyari.com/en/article/5784824>

Download Persian Version:

<https://daneshyari.com/article/5784824>

[Daneshyari.com](https://daneshyari.com)