Accepted Manuscript

Evidence of a shallow magma reservoir below Los Humeros volcanic complex: Insights from the geochemistry of silicate melt inclusions

Créon Laura, Gilles Levresse, Gerardo Carrasco-Nuñez, Laurent Remusat

PII: S0895-9811(18)30210-4

DOI: 10.1016/j.jsames.2018.09.017

Reference: SAMES 2014

To appear in: *Journal of South American Earth Sciences*

Received Date: 14 May 2018

Revised Date: 28 September 2018

Accepted Date: 28 September 2018

Please cite this article as: Laura, Cré., Levresse, G., Carrasco-Nuñez, G., Remusat, L., Evidence of a shallow magma reservoir below Los Humeros volcanic complex: Insights from the geochemistry of silicate melt inclusions, *Journal of South American Earth Sciences* (2018), doi: https://doi.org/10.1016/j.jsames.2018.09.017.

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.

ACCEPTED MANUSCRIPT

Evidence of a shallow magma reservoir below Los Humeros volcanic complex: Insights from the geochemistry of silicate melt inclusions

Créon Laura[1], Gilles Levresse[1], Gerardo Carrasco-Nuñez[1], Laurent Remusat[2]

[1]*Centro de Geociencias, Universidad Nacional Autónoma de México, Blvd. Juriquilla No. 3001. Querétaro, 76230, México.*

[2] *Muséum National d'Histoire Naturelle, Sorbonne Université, UMR CNRS 7590, IRD, Institut de Minéralogie, de Physique des Matériaux et de Cosmochimie, IMPMC, 75005 Paris, France.*

Corresponding author: lauracreon@gmail.com; ORCID: 0000-0001-7127-4269

Present address: Laura Créon, Geosciences Le Mans, Le Mans Université, UFR Sciences et techniques, Avenue Olivier Messiaen, 72085 Le Mans Cedex 9, France

ABSTRACT

Los Humeros volcanic complex (Eastern Trans Mexican Volcanic belt) is one of the three most important geothermal fields in Mexico and is currently producing electricity (ca. 90 MW). It is therefore pertinent to constrain the magma chamber characteristics, such as its depth, and the magmatic evolution of the complex in order to better define the superficial geothermal activity. In this paper we present the first geochemical data (major and trace elements) for 15 silicate melt inclusions and their five host rocks from Los Humeros volcanic complex.

We constrained the evolution of the volcanic complex by coupling X-ray spectrometry, ICP-MS, microprobe, X-ray microtomography and NanoSIMS analyses together with thermodynamical modeling on both whole rocks and silicate melt inclusions.

A ponding reservoir located within an interval betwwen 5 and 13 km at depth is evidenced by silicate melt inclusions entrapment pressures. This ponding depth's interval is in agreement with

Download English Version:

https://daneshyari.com/en/article/11033121

Download Persian Version:

https://daneshyari.com/article/11033121

Daneshyari.com