

Evidence of crust-doming in the Mesozoic rifting of the NW Iberian Chain (Spain)

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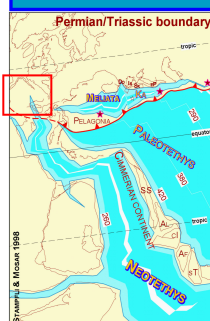
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1 INTRODUCTION

The Triassic-Liasic transition in the NW margin of the Iberian Chain (Spain) was characterised by a strong extensional regime. Such tectonic regime was responsible for the reactivation of the NW-SE trending Caliberian Rift, originally developed at the Permo-Triassic boundary. This rift was linked to the opening of the Neothetys Ocean, and enabled the ascent of the asthenospheric mantle and the emplacement of magmatic bodies in the NW margin of the Iberian Chain.

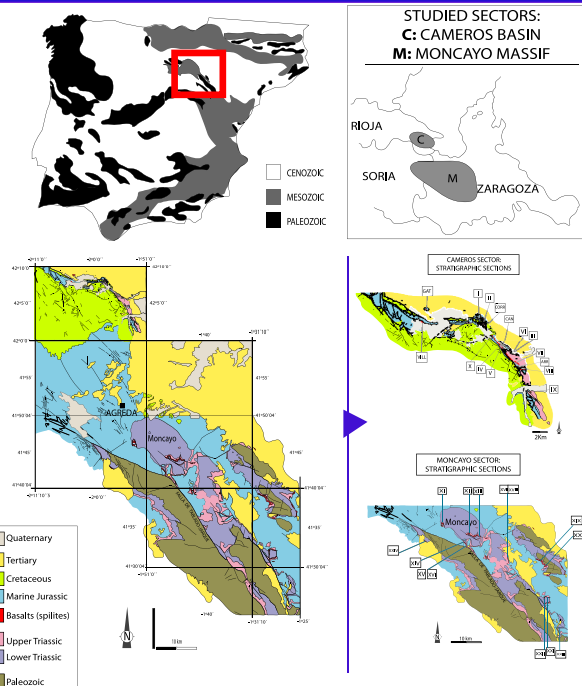
Geodynamic context



INITIAL QUESTIONS ABOUT THE MAGMATISM

- 1) What is the source of the studied magmatism?
- 2) Is there a single big igneous body emplaced along the Iberian rift? Can we define different bodies? How many?
- 3) In which global tectonic context did these igneous rocks emplace? Does the Neothetys ocean really trigger the Iberian magmatism?

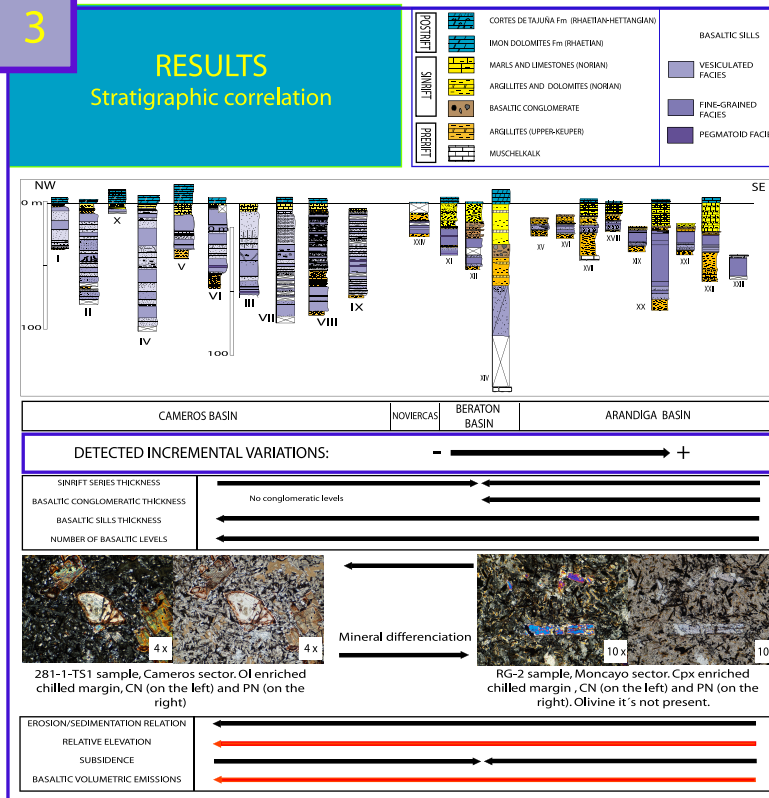
2 LOCATION



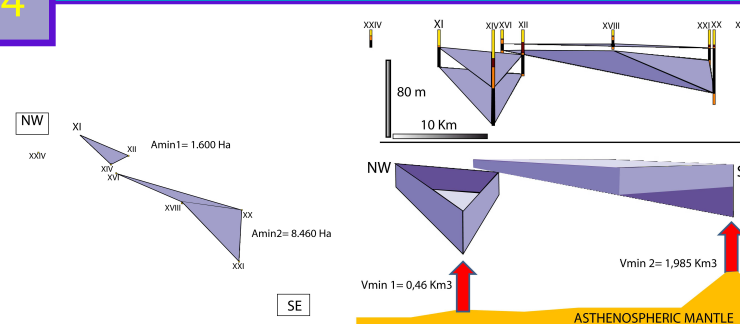
ACKNOWLEDGEMENTS:

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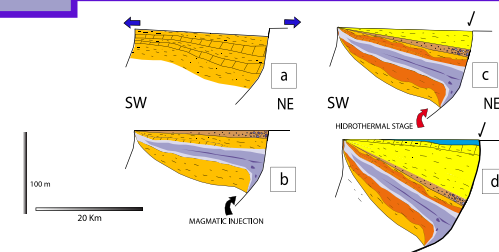
3 RESULTS Stratigraphic correlation



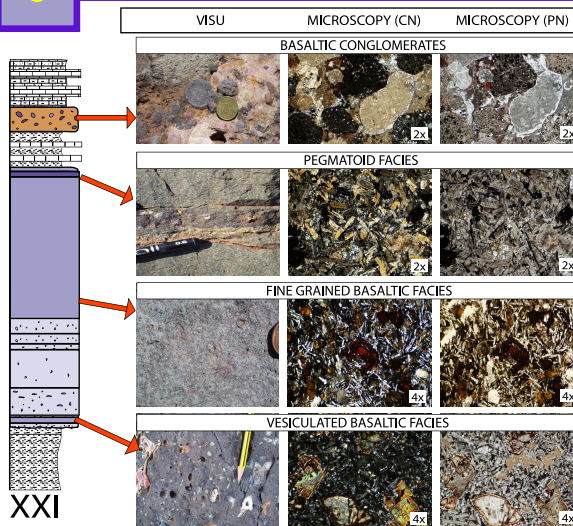
4 3D RECONSTRUCTION OF THE MONCAYO SECTOR SILLS



5 EMPLACEMENT MODEL



6 PETROGRAPHIC DESCRIPTION



7 CONCLUSIONS

- 1) According to their mineral assemblage, these basalts are alkali basalts with an asthenospheric mantle source.
- 2) Combining 3D stratigraphic reconstruction and the geochemical affinity of the igneous rocks, we interpret that one main regional episode of magma was emplaced within two main volcano-sedimentary basins: the Cameros basin to the NW and the Moncayo basin to the SE.
 - a) The geochemical affinity of the intruded magma.
 - b) The high thickness of the igneous bodies.
 - c) The low thickness of the co-genetic sin-sedimentary series.
- 3) A crustal-doming related to an ascent of the asthenospheric mantle could have taken place in the NW margin of the Iberian Rift (Sierra de Cameros), in agreement with:
 - a) The geochemical affinity of the intruded magma.
 - b) The high thickness of the igneous bodies.
 - c) The low thickness of the co-genetic sin-sedimentary series.