

PS Post-Rift Tectonics in Rifted Margins and Surrounding Domains*

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Search and Discovery Article #30510 (2017)**

Posted July 17, 2017

*Adapted from poster presentation given at 2017 AAPG Annual Convention & Exhibition, Houston, Texas, April 2-5, 2017

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Abstract

When examining the tectonic evolution of rifted margins, the focus is mainly on the syn-rift period where tectonic processes are active and drive lithospheric deformation leading to continental breakup. The post-rift period is often assumed to be tectonically passive and controlled by the cooling of the thermally perturbed thinned lithosphere. However, Atlantic rifted margins show major sedimentary unconformities followed by substantial siliciclastic input in the offshore, 20 to 60 Myr after breakup. Onshore, contemporaneous km-scale vertical movements and shortening features affecting the continental domain are recorded and can be found hundreds of kilometers away from the coastline.

In this work, we provide an integrated study of the source-to-sink systems found in the Northwest African Atlantic margin. We examine and quantify the exhuming domains and the subsiding regions.

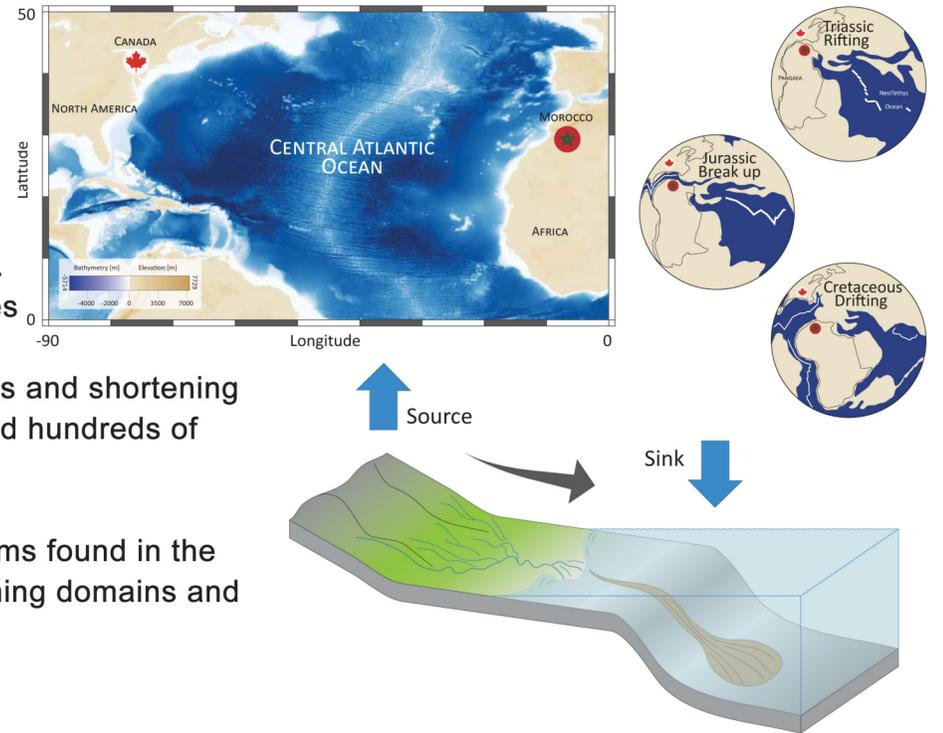
POST-RIFT TECTONICS IN RIFTED MARGINS AND SURROUNDING DOMAINS

Gouiza et al. (AAPG 2017 ACE Houston)

ABSTRACT

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TOOLS AND METHODS

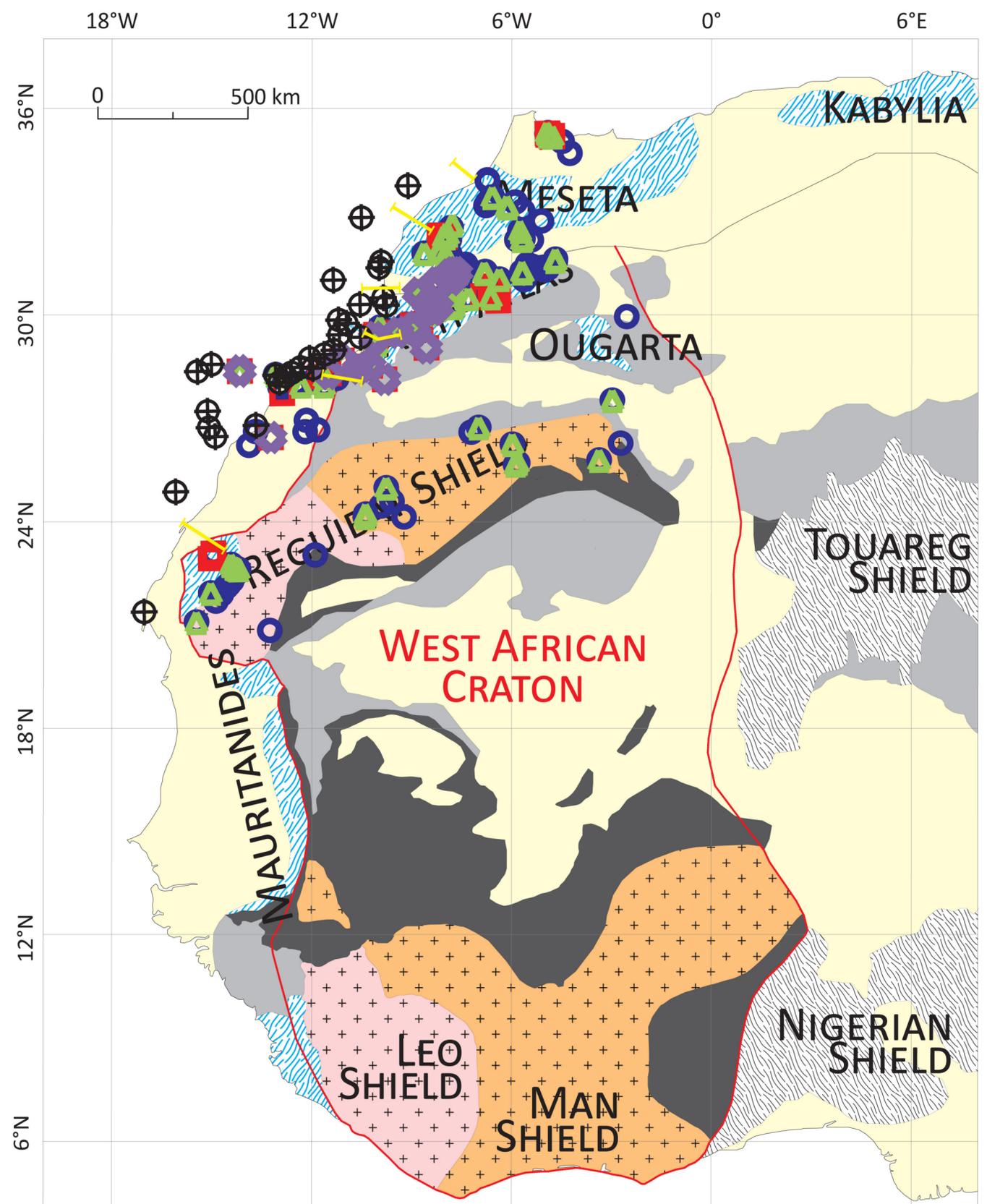
Low-temperature geochronology

-  Zircon fission tracks (ZFT)
-  Zircon (U-Th)/He (ZHe)
-  Apatite fission tracks (AFT)
-  Apatite (U-Th)/He (AHe)

Geophysics

-  Well data
-  Seismic data

-  Mesozoic to Recent
-  Neogene-Quaternary
-  Paleogene
-  Upper Cretaceous
-  Lower Cretaceous
-  Basic intrusions (Late Triassic-Early Jurassic)
-  Variscan belts
-  Paleozoic cover
-  Neoproterozoic cover
-  Pan-African terranes
-  Paleoproterozoic basement
-  Archean basement
-  Precambrian inliers (Anti-Atlas)



POST-RIFT TECTONICS IN RIFTED MARGINS AND SURROUNDING DOMAINS

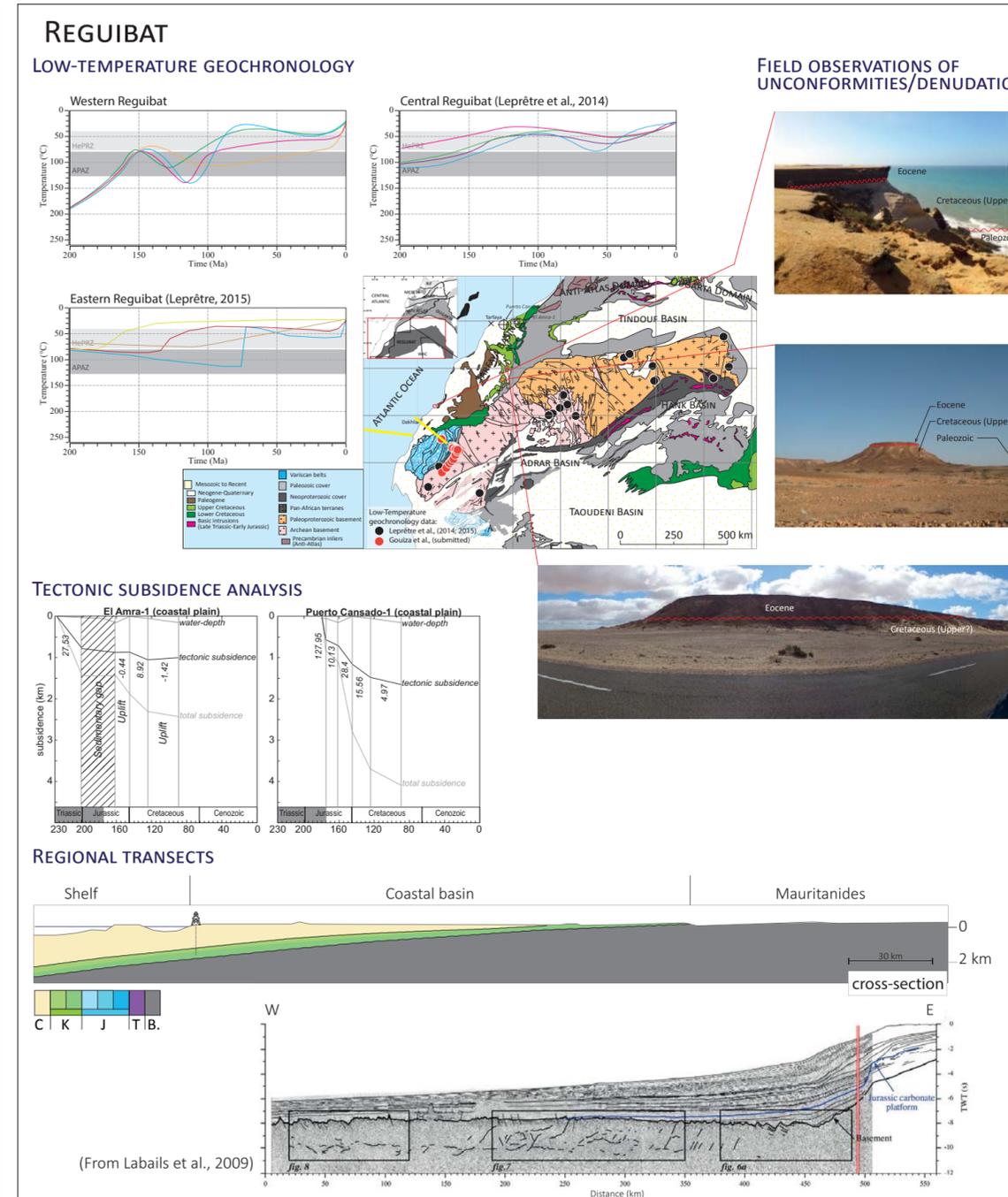
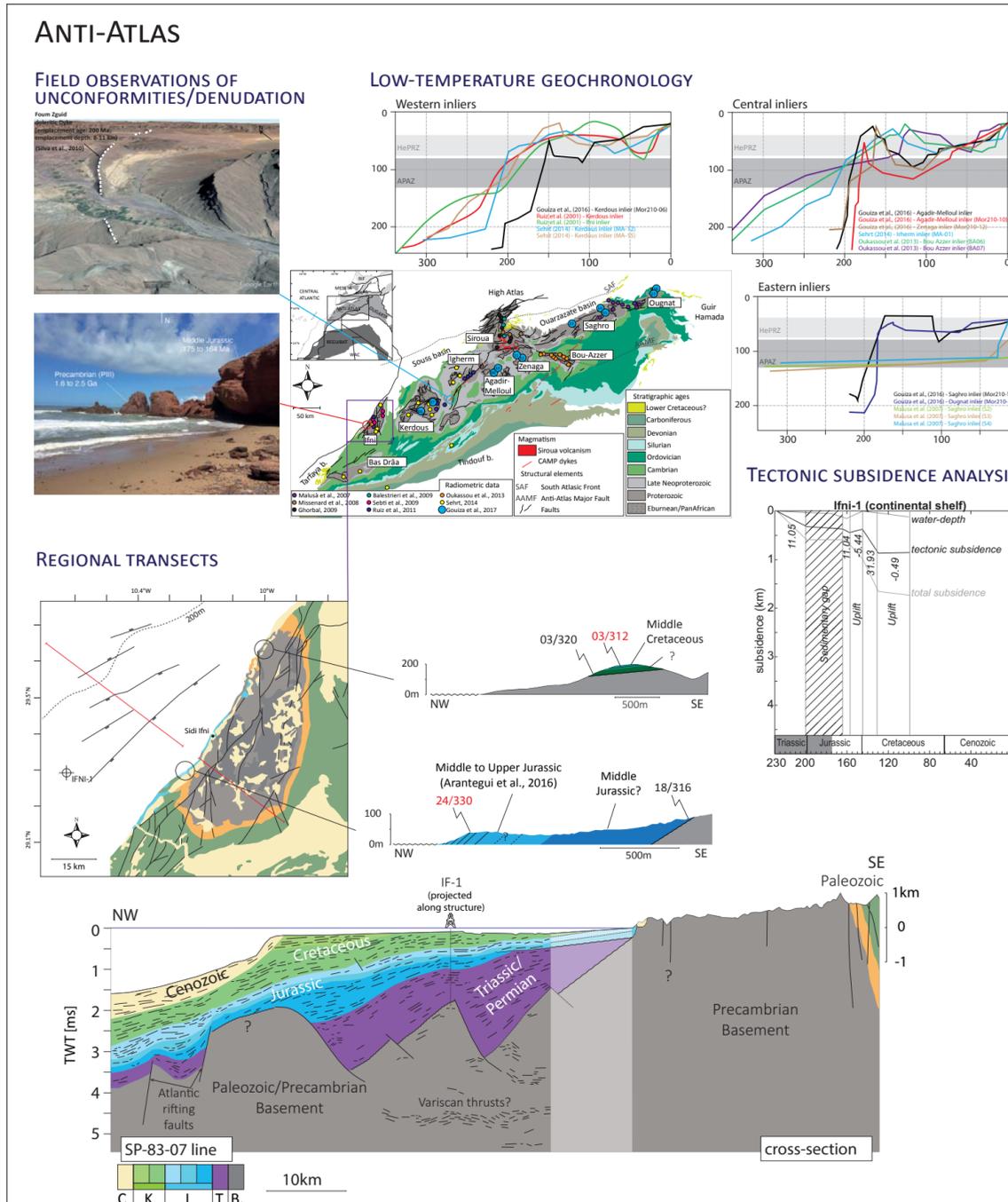
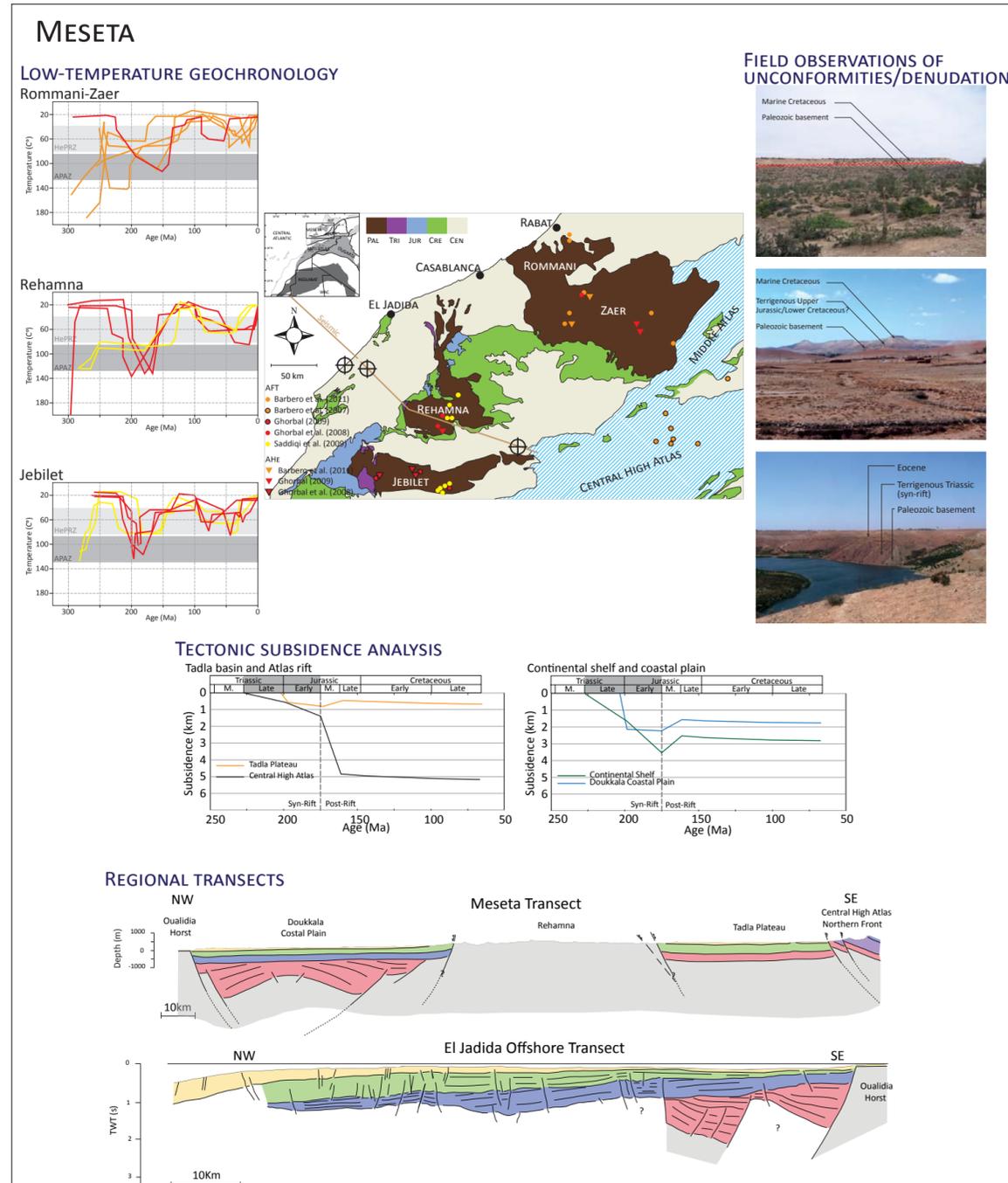
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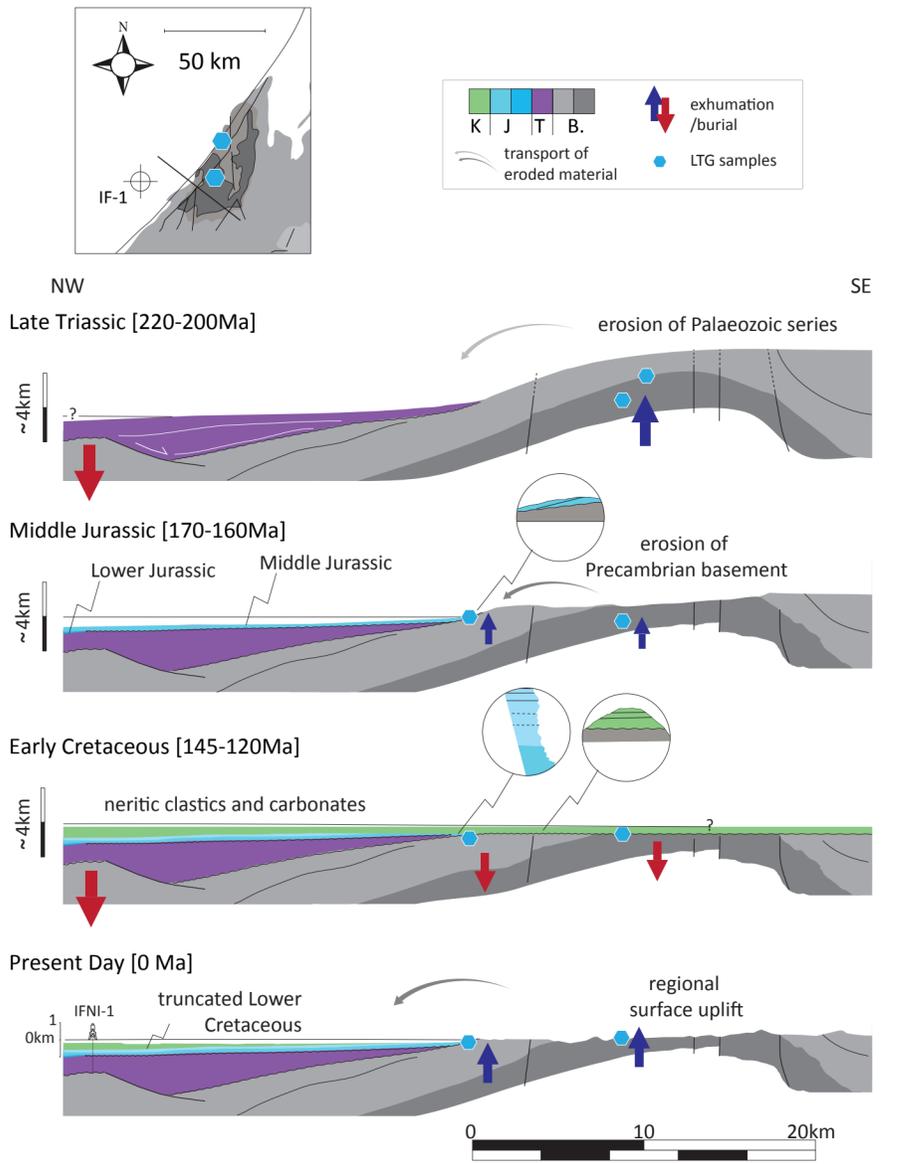
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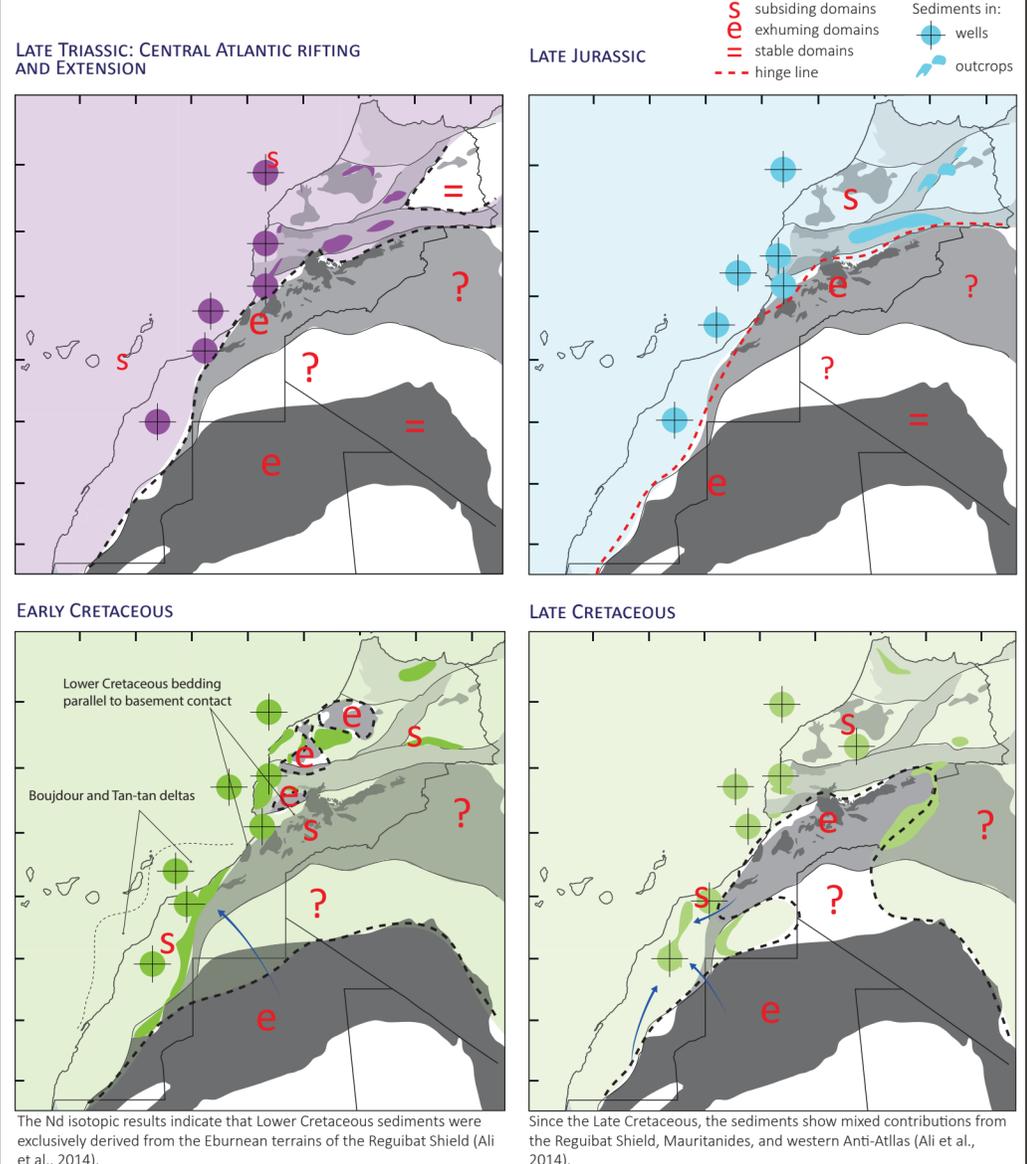
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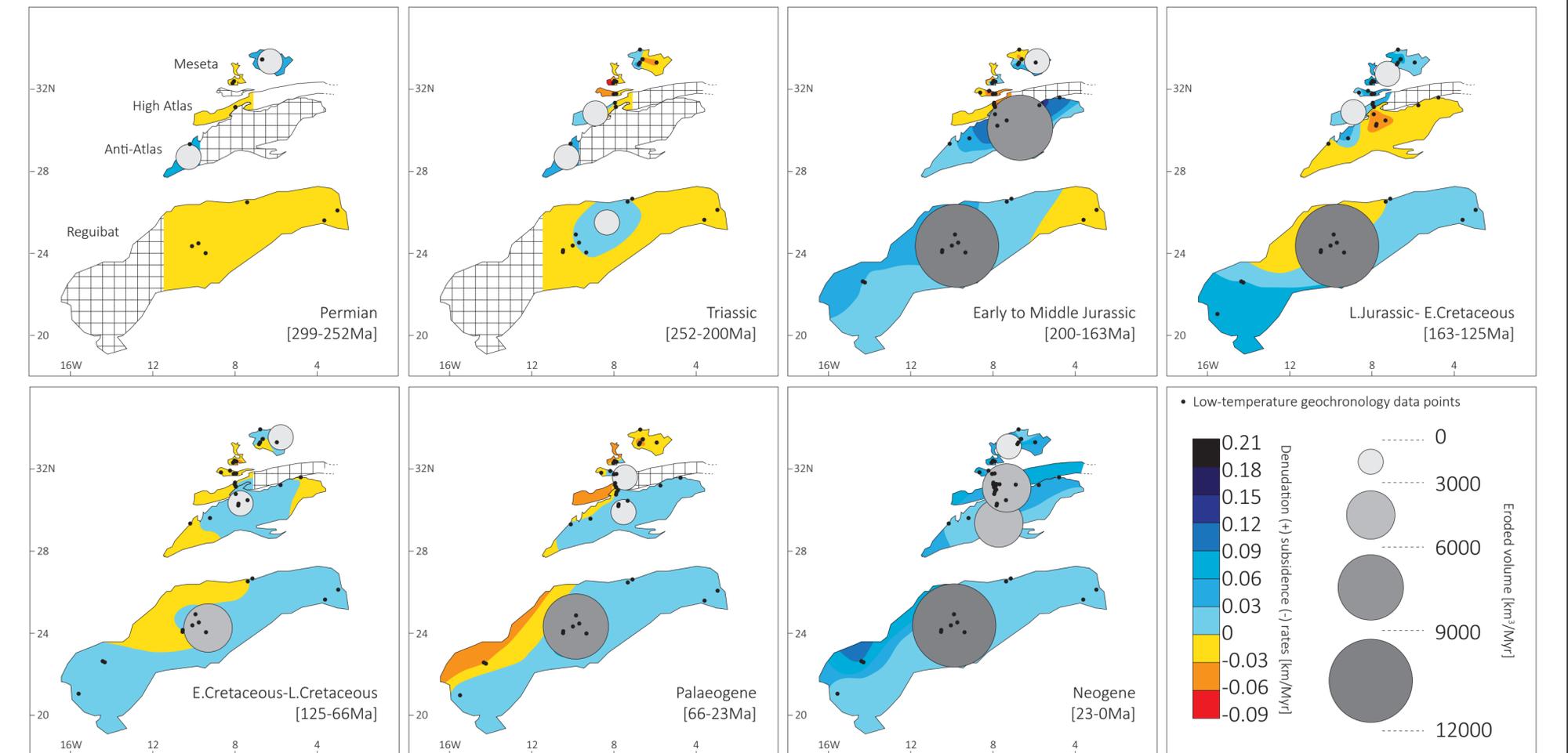
2D RECONSTRUCTION



PALEOGEOGRAPHIC RECONSTRUCTION



QUANTIFYING EROSION



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