

# **The Upper Triassic to Lower Jurassic sedimentary succession in southern Portugal -a stratigraphical framework for CAMP\*-related magmatism**

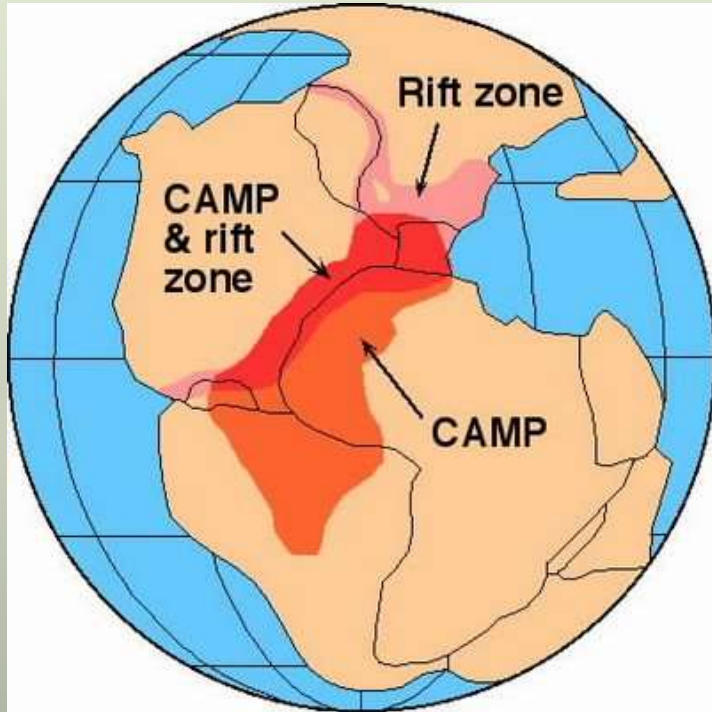
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# GEODYNAMIC FRAMEWORK



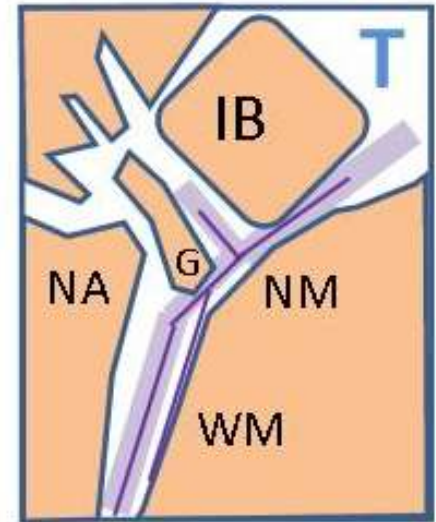
The CAMP event extends over four tectonic plates, related with the break-up of Pangea.

**IB** - Iberia  
**G** - Grand Banks  
**NA** - North America  
**NM** - North Morocco (Atlas)  
**WM** - West Morocco

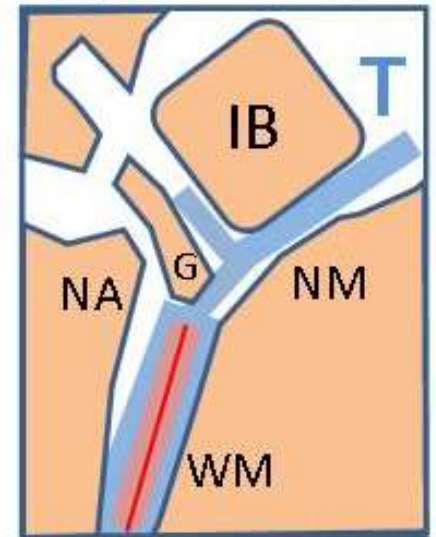


**T** - Tethys marine realm  
 1 - Salt Basins and volcanics  
 2 - Ocean spreading  
 3 - Shallow marine carbonates  
 4 - Deep marine carbonates  
 5 - Alluvial to marine siliciclastics  
 6 - Transitional siliciclastics and carbonates

Late Triassic – Step 1

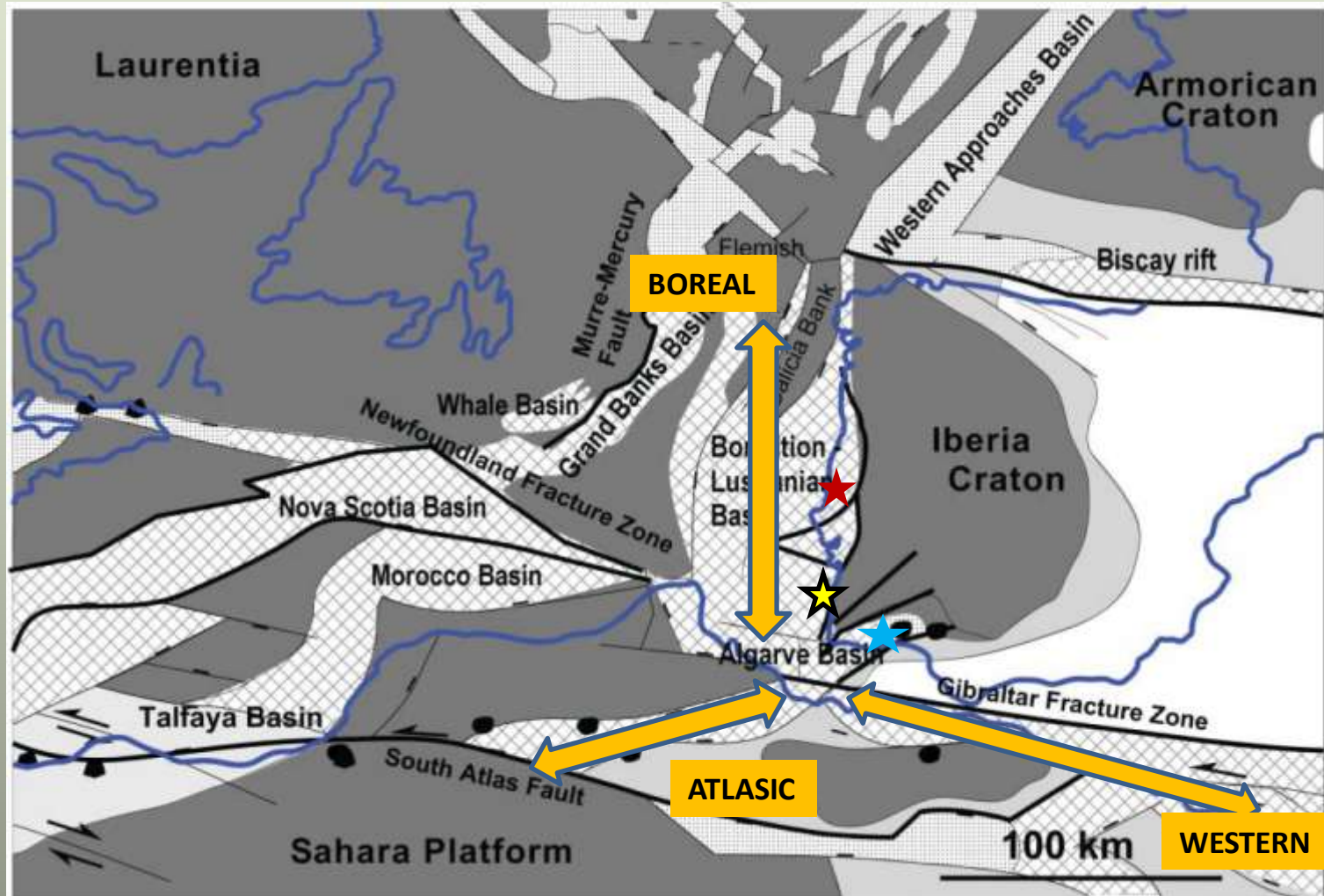


Early Liassic – Step 2



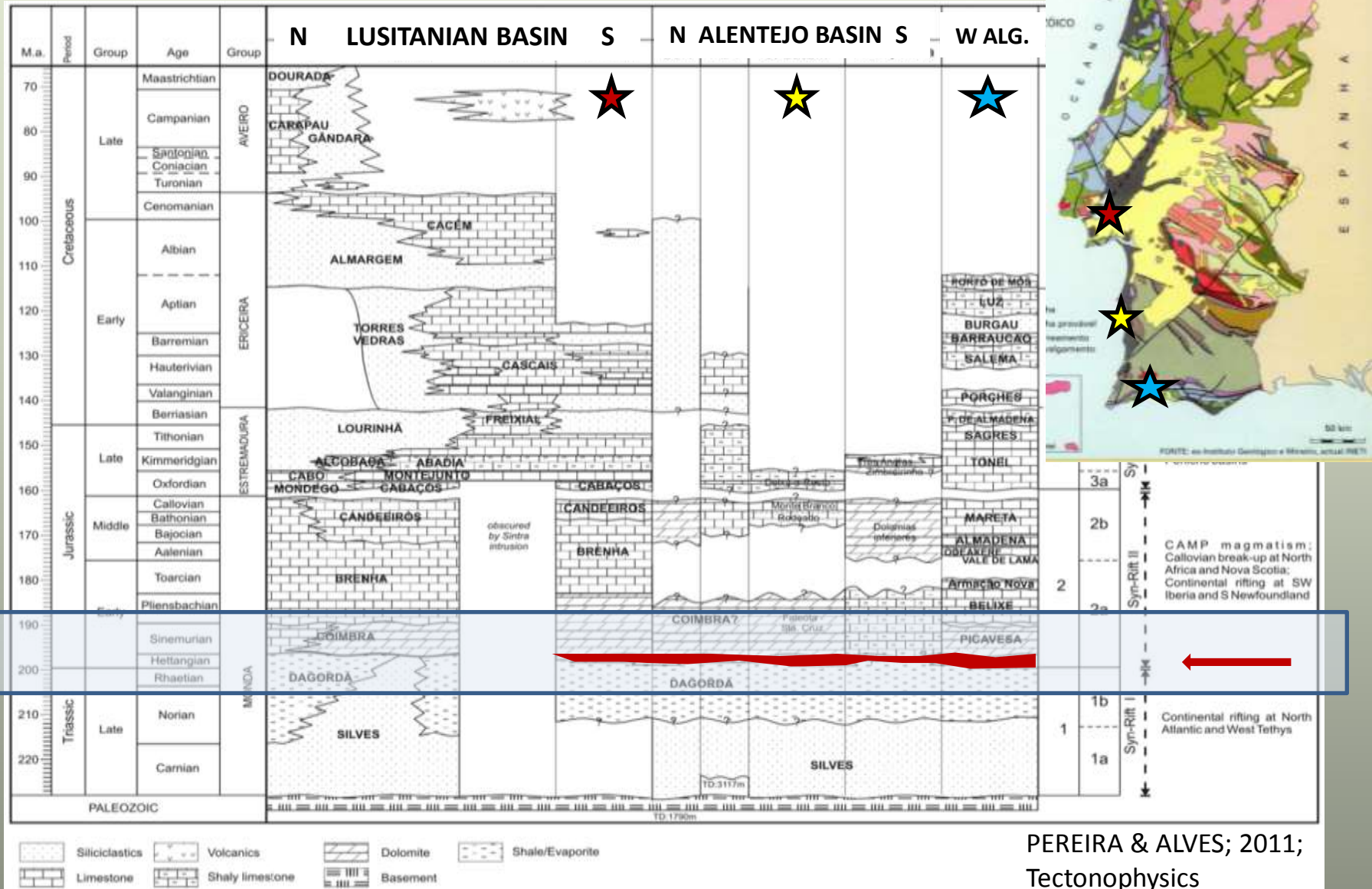
# WEST IBERIAN BASINS IN THE TETHYAN REALM

- ★ LUSITANIAN
- ★ ALENTEJO
- ★ ALGARVE



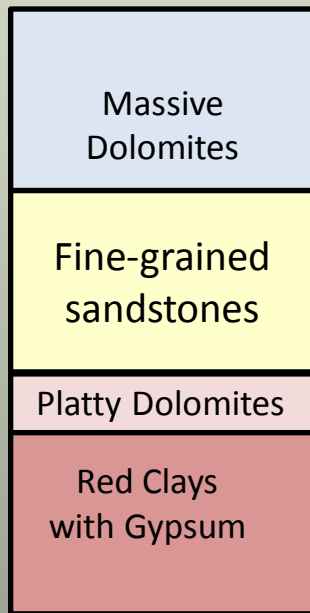
(adapt. MATIAS et al., 2011)

# STRATIGRAPHIC SIGNATURE OF CAMP-related MAGMATISM in WESTERN IBERIAN BASIN



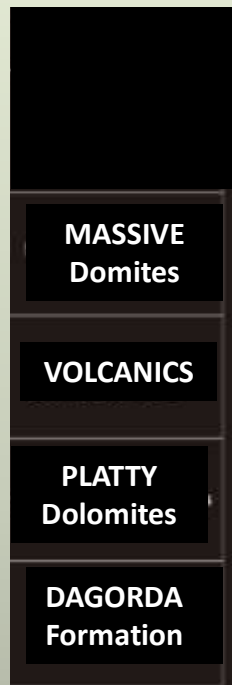
## LUSITANIAN BASIN

NO STRATIGRAPHIC RECORD of the CAMP-related magmatic event.  
Its position is occupied by thin coastal siliciclastics.

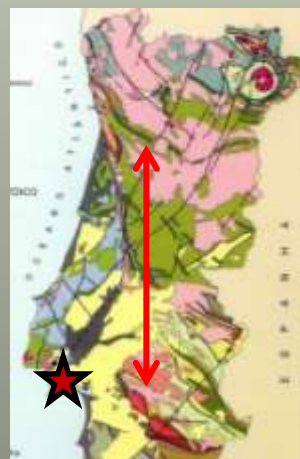


# LUSITANIAN BASIN

## Southern most sector

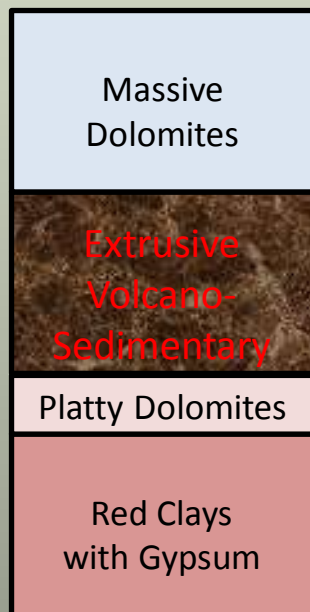


The Arrabida chain is the only place where the CAMP-related magmatism is recorded in the Lusitanian Basin, around 300 km long N-S



## ALENTEJO BASIN

CAMP-related volcanics include rare thin sedimentary clay intercalations



FATEOTA Fm

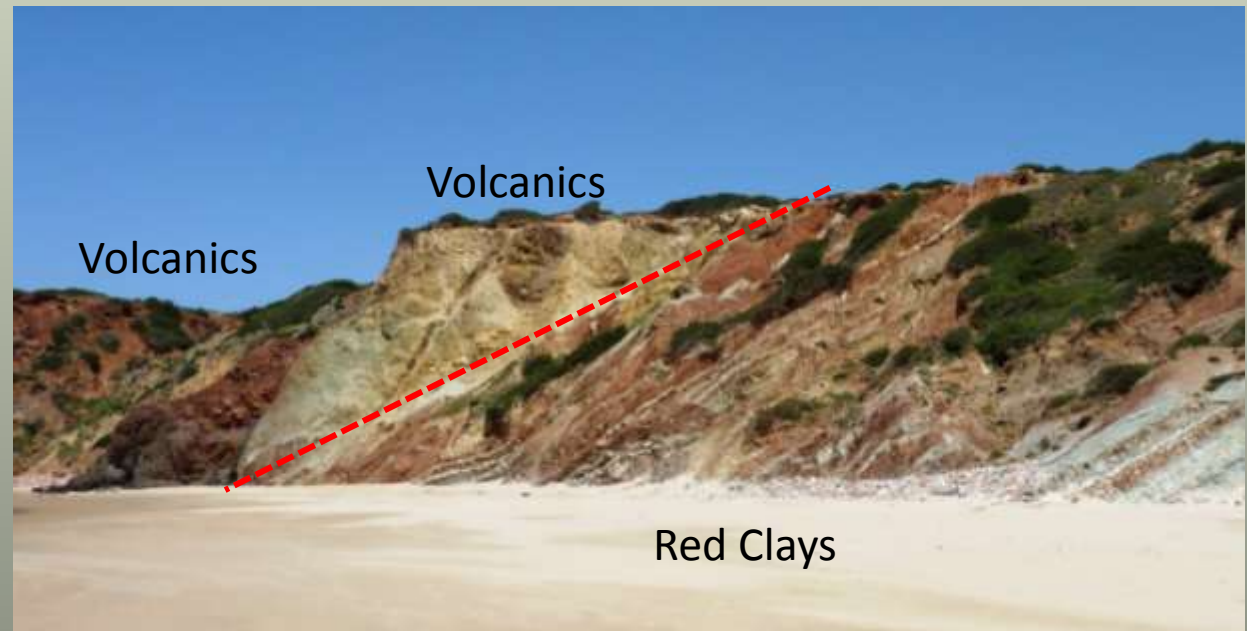
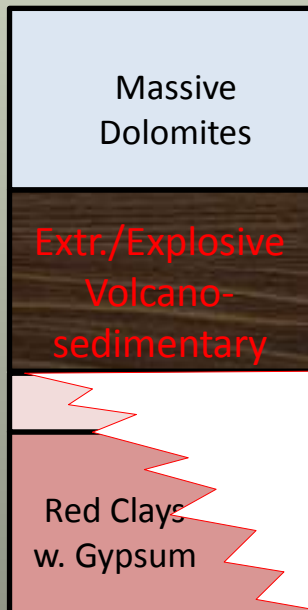
VOLC.SED.  
Complex  
(50 meters)

SILVES  
Carb.-Evap.  
Complex

## W ALGARVE BASIN

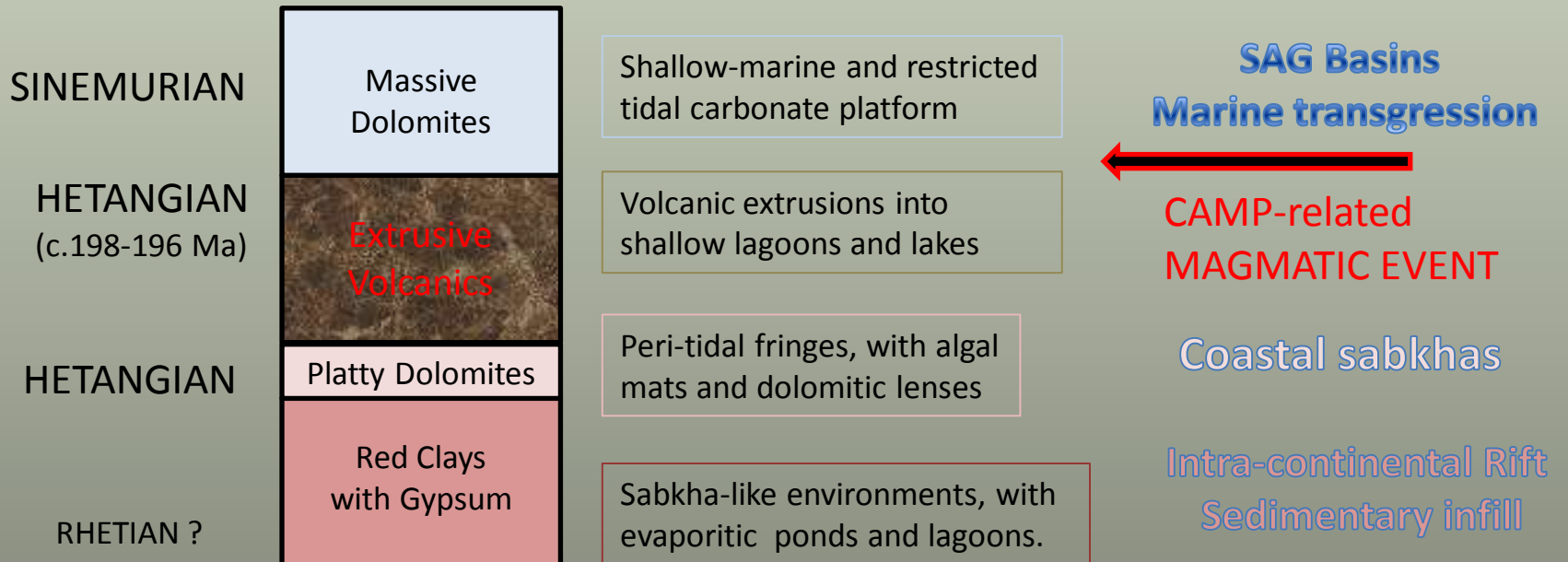
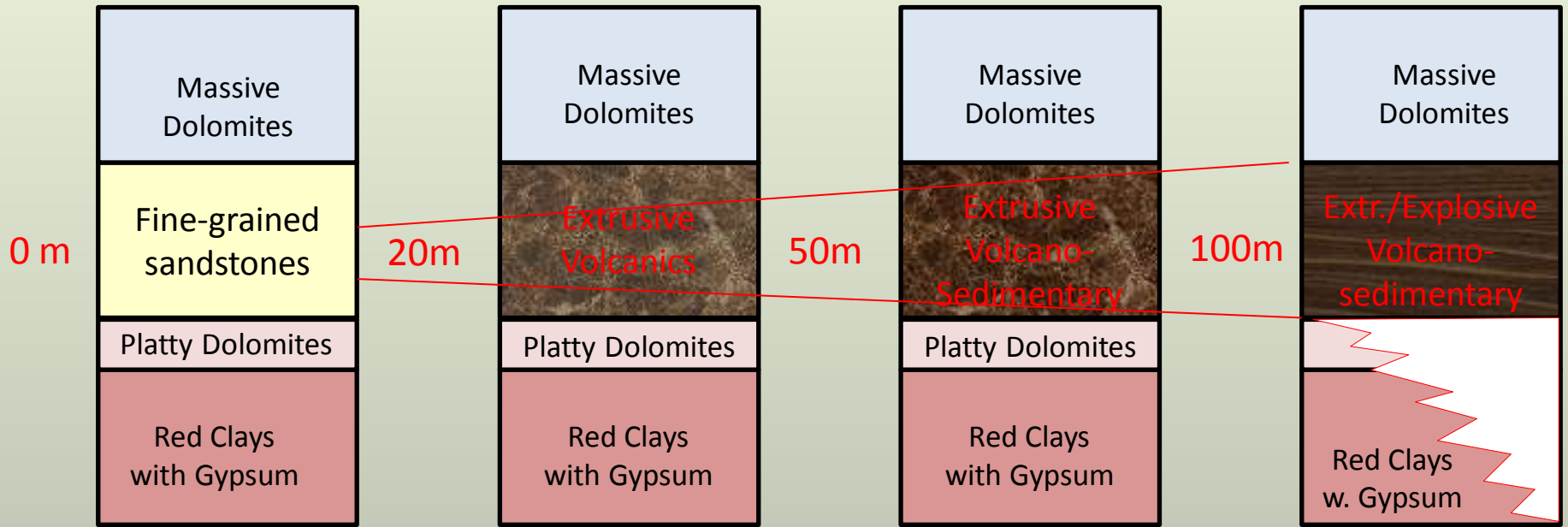
The CAMP-related volcanics lie over an erosive surface, directly on Triassic red clays and sandstones or even Paleozoic shales.

This situation is interpreted as a result of the regional thermal intumescence and basin structures reactivation





# SYNTHESIS – the CAMP record in Western Iberian Basins



# CONCLUSIONS

1. The Western Iberian Basin record the northern boundary of a CAMP-related volcanic event.
2. This record increases in thickness and complexity towards South, where the main CAMP is developed.
3. At the Algarve Basin, deep erosive features (over 100 meters, reaching the Paleozoic basement) indicate that the CAMP-related event triggered an up-lift in the Southern Iberia.
4. This regional magmatic and geodynamic event marks the end of an Late Triassic intra-continental rifting (with siliciclastics and evaporites), and the beginning an Early Jurassic carbonate platform development (with dolomitic sedimentation).
5. Where CAMP-related event is absent (most of the Lusitanian Basin) this Early Jurassic shallow sedimentation would rapidly evolve towards a deep ramp with high-TOC marls, deepening to the NW.
6. This regional geometry could point to a relation between the absence of a CAMP record and the high potential of Sinemurian-Pliensbachian deposits as a source-rock.