

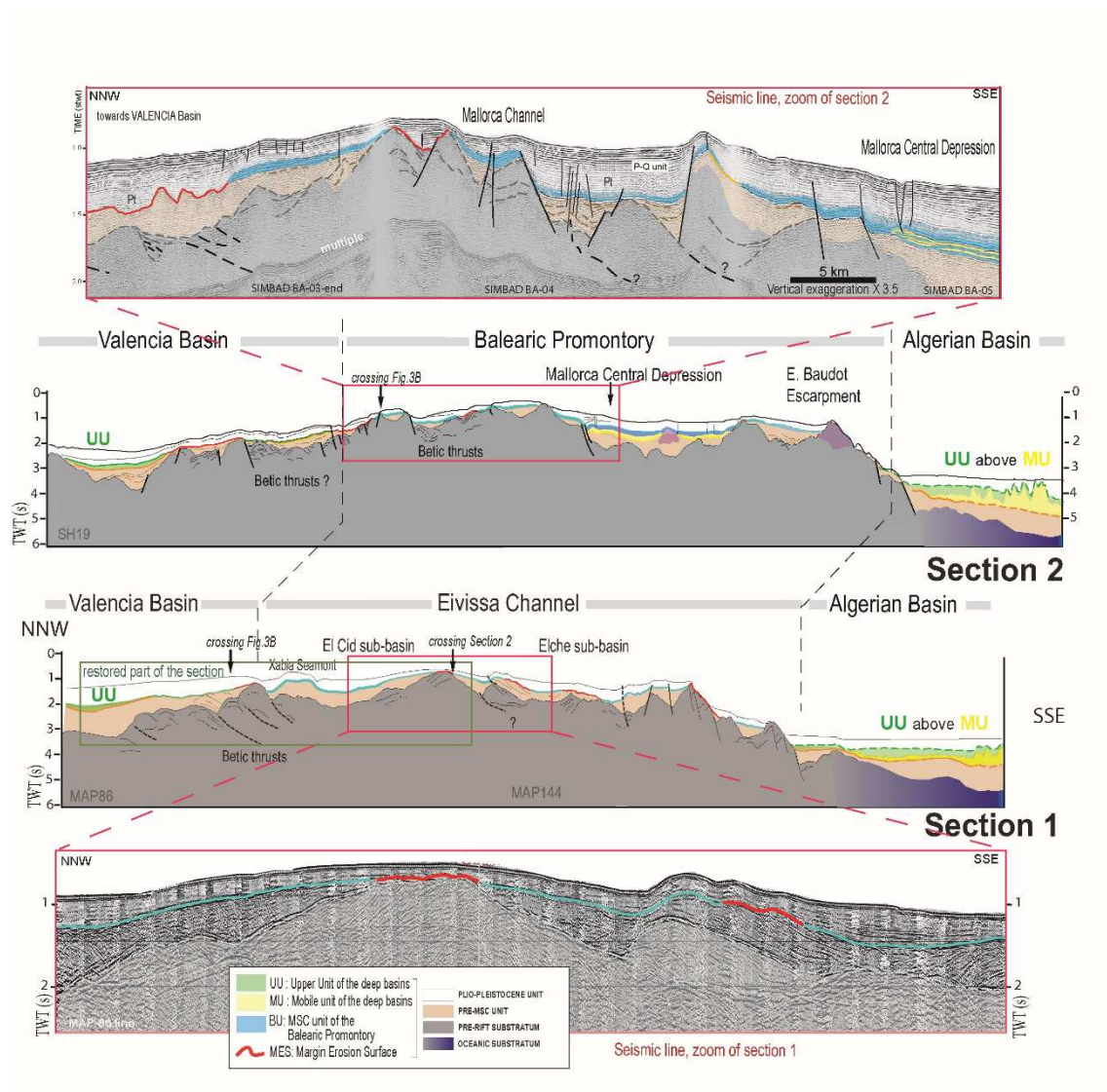
# Terrestrial colonization of the Balearic Islands: New evidence for the Mediterranean sea-level drawdown during the Messinian Salinity Crisis

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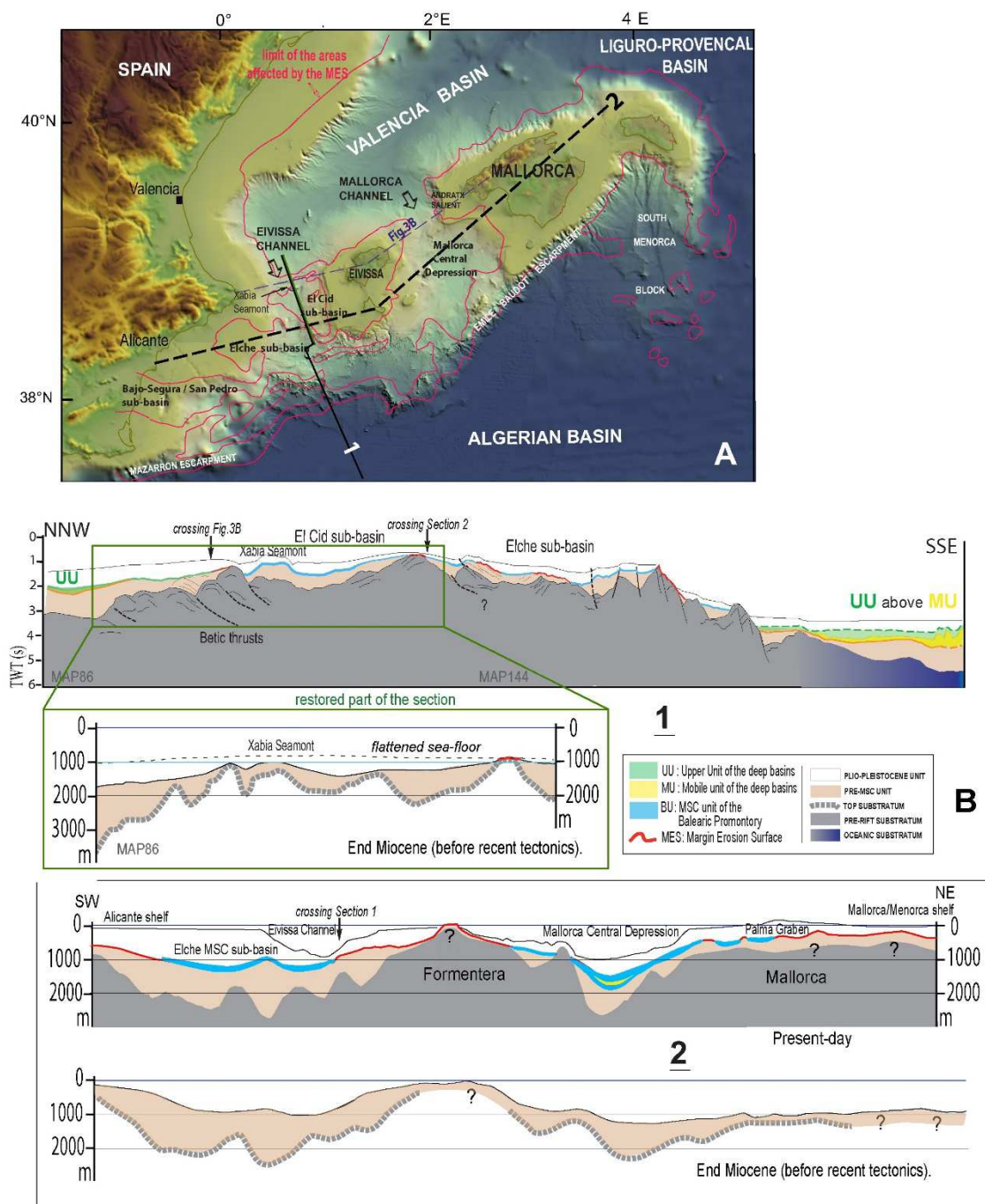
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## Supplementary Figures (DR1 and DR2):



**Figure DR1.** Sections crossing the Eivissa and Mallorca Channels. See figure 1 for location. Section 1 displays thin MSC unit in small perched sub-basins, deformed and uplifted by recent tectonics. Seismic line (zoom of section 1) reveals large-scale flexure and small-scale folds. MSC marker and the seafloor are parallel, attesting for very

recent (Present-day) deformation. Section 2 joins the Valencia Basin to the Algerian one through the Mallorca Channel and the Mallorca Central Depression. Seismic line (zoom of section 2) shows post-MSC subsidence associated with normal faulting. This sub-basin was probably closed during MSC, allowing salt precipitation in higher position compared to the deep basinal salt and explaining its poorly eroded character despite its elevated position.



**Figure DR2.** A: Bathymetric map of the Balearic Promontory with the location of the sections. In red, contour limits of the eroded areas during the sea-level drawdown (MES). B: Sections on the Balearic Promontory and their End Miocene restoration. See figure DR-1 for comment of section 1 crossing the Balearic Promontory from the Valencia Basin to the Algerian one. The end of Miocene restoration of the seismic line MAP-86, assuming important post-MSC deformation (see seismic line figure DR-1), shows that the Eivissa Channel was deep ( $>1,000$  m) during the Messinian. Section 2 connects the Alicante to Mallorca passing across two deep sub-basins (Elche and the Central Depression sub-basins), which recorded major post-MSC subsidence. The removal of the thick Plio-Pleistocene prograding Alicante shelf is responsible for an important isostatic rebound partly compensated by the tectonic uplift (200-300 m). In the Central Mallorca Depression, subsidence is mainly due to a tectonic flexure, and stays deep enough ( $> 1000$  m, deeper than the Elche sub-basin) at the end of Miocene to allow salt deposition. End Messinian restoration was made by: a) removing post-MSC deformation by (i) flattening the pos-MSC deformation, (ii) assuming regional uplift in the Eivissa Chanel following seismic regional interpretation (large scale flexure), and b) calculating a local isostatic rebound removal of the Plio-Pleistocene load and assuming a mean 20 km thick crust in the Balearic Promontory. The exact nature of the pre-MSC units is unknown. Crustal thickness is not precise. Both last statements lead to 100 m vertical uncertainties in the isostatic calculations.