



1. Weekly Report (15. - 16.07. 2023)

The RV METEOR expedition M191 (SUAVE = Submarine volcanism in the western Sicilian Channel) is a joint project of GEOMAR Helmholtz Centre for Ocean Research Kiel (Germany), the University of Malta (Malta), the University of Birmingham (United Kingdom) and the Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS) (Italy) with cruise participants from these institutes as well as from the Monterey Bay Aquarium Research Institute (MBARI) (USA), Victoria University Wellington (New Zealand), and the Universities of Oxford and Edinburgh (United Kingdom).

The main working area is the Sicilian Channel, located south of Sicily (Fig. 1), where tectonic movements cause melting in the upper mantle, presumably by decompression along extensional fracture zones and rifts. Therefore, magmatism is widespread and includes the volcanic islands of Pantelleria and Linosa, and numerous submarine volcanic edifices. Although some magmatic products date to 9.5 Ma, submarine eruptions have been reported up to historical times, such as at Pinne Bank during the first Punic War (264-261 BC), Graham Bank in 1831, and 5 km NW of Pantelleria in 1891.

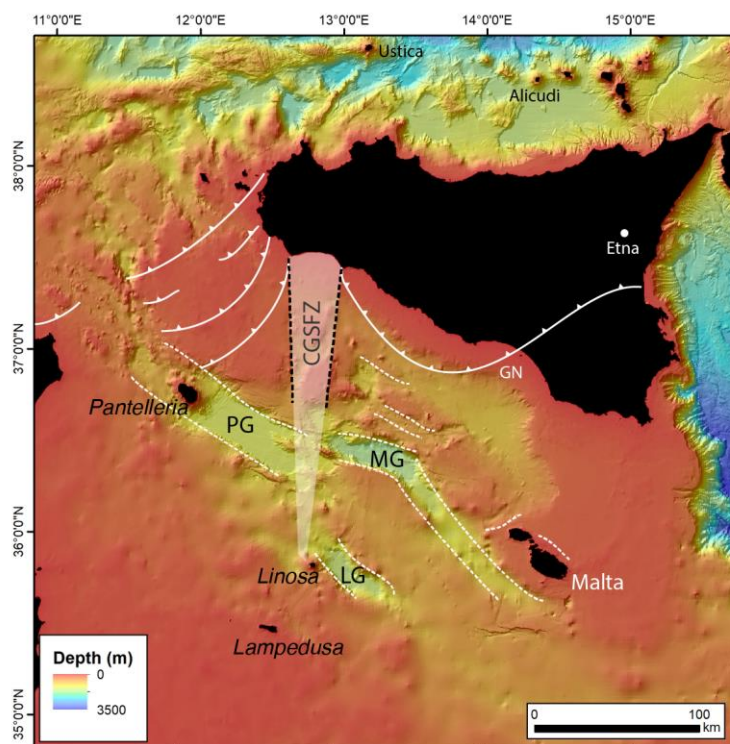


Fig. 1: The Sicilian Channel, the working area of M191, is mainly formed by the Pelagian foreland of the African Plate, which collided with the European Plate along the Sicily-Maghrebian overthrust zone until the Early Pliocene (curved lines in map). The subsequent re-orientation of the stress field caused the opening of the Pantelleria (PG), Linosa (LG) and Malta (MG) grabens and large-scale shearing on both sides of the Capo-Granitola-Sciaccà Fault Zone (CGSFZ).

We plan to conduct multibeam echosounder, sediment echosounder, and magnetometer surveys to map this volcanically active area at high resolution and, if appropriate dredge sites can be identified, to sample igneous rocks from several volcanic edifices. Subsequent post cruise studies at the involved institutions will include analyses of the recorded acoustic/geophysical data as well as geochemical investigations (including dating) of the recovered rock samples.



Fig. 2: The RV METEOR leaving the port of Algiers (Photo: J. Geldmacher)

The vessel left the port of Algiers in the morning of July 16 to start its approximately 3.5 days long transit towards the main working area. Underway, surface water samples for nanoplankton research will be collected. The weather is excellent, as is the hospitality and support of the entire ship's crew.

In the name of the M191 scientific party,

Jörg Geldmacher
(GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel)