VASSILAKIS, Emmanuel[1] & STOCKHERT, Bernhard[2]
[1] University of Athens, [2] Institute for Geology, Mineralogy and Geophysics, Ruhr-University Bochum

A live book for structural geology at Livadia – Western Crete. Proposal for a high level structural geosite.

Along the westernmost coastline of Crete island where the geotectonic unit of Phyllites – Quartzites crops out, impressive folded beds can be observed. At various road cuts, along the road from Kissamos to Elafonissi, a series of tectonic structures have come to the surface after the construction of the road and are being studied for many years, in order to extract important information about the history of the Cretan nappe pile.

At the Livadia beach, in an area not bigger than 300m^2 at a black fossiliferous aragonitic marble outcrop, a large number of tectonic structures are exposed. Folds and hinges are revealed in three dimensions as the sea has eroded some of the intercalated beds. Also, systematically oriented joints in geometric relation with the folding stress field can be studied in detail, along with several generations of micro-fault and vein systems forming a lot of structures that can usually be seen in cartoon figures of popular books about structural geology.

In our opinion this proposed site fulfills the standards for a new “structural” geosite that can be used for educative reasons. In addition, because of the uplift and the sea level changes that have occurred in this area during the Holocene, this site could be included in the geosites about “Geomorphological features” as various paleo-shorelines can be observed there.