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SSW-directed low-angled extension on Makronisos, Western Cyclades, Greece

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Makronisos is the most northwesterly island in the Western Cycladic archipelago, lying only a few kilometres from the Attica mainland port of Lavrion. The island is pencil-shaped, 13 km long (NNE-SSW) by 2.5 km wide, with a single axial ridge irregularly rising from 120 m in the south to 260 m in the north. Most of the island comprises a sequence of schists and interlayered blue-grey marbles that exhibit chocolate-tablet pinch-and-swell. The tectonostratigraphically highest level of the central to northern parts of the island consists of pale coloured calcite ultramylonites overlying cataclastically deformed schists. These form outliers on the crest of the island and also crop-out along the west and east coasts. Stretching lineations in all units trend NNE-SSW and all shear criteria indicate a top-to-SSW shear-sense (S-C-C′, asymmetric porphyroclasts). Large-scale ($\sim$0.35 km wavelength) upright folds, with axes parallel to the stretching direction, control the overall outcrop pattern. The style of deformation is consistent with that found in more southeasterly parts of the W. Cyclades (Kea, Kythnos, Serifos) and also to that seen in the adjacent Attica mainland and confirms the continuity of top-to-SSE extension in that part of the Aegean. These observations allow the tectonostratigraphy of the mainland to be correlated with that of the W. Cyclades and hence a scenario for the exhumation of the metamorphic units in this region to be proposed.