

UNIVERSITY OF ALBANY
DEPARTMENT OF EARTH & ATMOSPHERIC SCIENCES
Geological Map of the Detachment fault of the North Area of Kythera Island

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Geological mapping by A. E. Marellos
Contour interval 40m (50m interval)
Cartographic design by A. E. Marellos
from National Centre for Maritime Research (NCMR) Topographic map, original scale 1:50,000.
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Gravimetric data from the GEM and ERS-1 satellite gravity mission.
Point data was obtained by NOAA Office of Response and Recovery, Ocean Research and Applications Division,
Laboratory for Satellite Altimetry through the lab's bathymetry data extraction website.

Map created in ESRI ArcInfo, composite satellite image RGB (1,2,3)

created in ERMAPPER, photogeographic map and 3D Models created

in Global Mapper. The 3D Model contains SRTM elevation data

and a composite (1,2,3) Landsat image.

SCALE: 1:15,000

Elevation Contour Interval 40m
Isopach Contour Interval 50m

Normal Fault

Normal Fault (Inferred)

Overthrust fault

Detachment fault

Detachment fault (Inferred)

Top shear sense displacement

Sinistral shear sense

Dextral shear sense

Lineations

Mineral lineation

Strong stretching lineation

Intense stretching lineation

Strike, Direction of Dip and Dip Angle

Outcrop

Outcrop, probably displaced by landslide

Samples Location

Villages - Toponyms

Contour line, 40m contour interval

Depth Contour (isopach, 50m contour interval)

Coastline

Main road network

Dirt road

Dirt track/path

Quaternary sediments

Pleistocene sedimentary series in brackish or marine water deposition environment.

N. Quaternary sediments

Sands and pebbly gravels. Red coloured breccias of limestone pieces, cemented by calcitic material or of shale pieces, cemented by terra rossa.

Neogene sediments

Pliocene sedimentary series in fresh or brackish water deposition environment.

M. Red Conglomerates

Sandy pebbly gravels, loam, talus slopes and dunes. Red coloured breccias of limestone pieces, cemented by calcitic material or of shale pieces, cemented by terra rossa.

L. Regressive Conglomerate

K. Transgressive Conglomerate

cemented by calcitic material, without fossils. Gravels (of limestone, crystalline rocks, flysch, chert.)

J. Marls

with marine fossils, mammal bones, sandstones, yellow marls, sandy limestones. (*Cyprinoid planorbis*, *Balanus* sp., *Clamsys scabrius*, *Pecten corbiculus*, *Fibularpecten tenuirostris*, *Ammonia ammon*, *Ammodytes ocellatus*, *Spondylus crassostrea*.)

I. Limestones with chert layers (Cretaceous)

Marly limestones. They contain chert in nodules, and lenses. Fine-grained limestones looking like lithographic limestones, cut almost always by calcite veins. Within these limestones there are iron oxide rinds.

H. Cherts (Upper Jur)

Brown-red, red-black, green chert and shales segregated in thin planar beds.

G. Clastic facies (Triassic)

Clastic facies, sands and shaly sediments

Tripolis Unit

Sedimentary units overlying the metamorphic rocks with a tectonic/structural contact context (Potamos area).

F. Flysch (Late Eocene)

consisting usually of gray-green sandstones and sometimes of green-brown shales

E. Limestones (Eocene)

Black, grey, dense limestones, containing Nummulites and other neritic fossils.

D. Limestones with dolomites (Upper Cretaceous)

Blue-black, dense, containing numerous *Clypeaster* (*Clypeaster pilosus*), *Balanus* sp., *Clamsys scabrius*, *Pecten corbiculus*, *Fibularpecten tenuirostris*, *Ammonia ammon*, *Ammodytes ocellatus*, *Spondylus crassostrea*.)

Arna Unit

Forming the "basement" of the island

C. Semi-metamorphic marbles

Semi-metamorphic limestones, marbles, light, blue-gray, pink, in places well jointed to several directions. Dolomites containing gypsum.

B. Metamorphic Unit

Gneiss, mica schist, phyllites and mylonites. Locally, blue-gray-white marble is encountered.

A. Serpentinite Unit

Serpentine with chlorite and magnetite. One outcrop-North of Agia Pelagia area.

