

Results of Reflection Seismic Measurements in the Southern Aegean Sea Cruises of F.S. *Meteor* and R.R.S. *Shackleton*

by

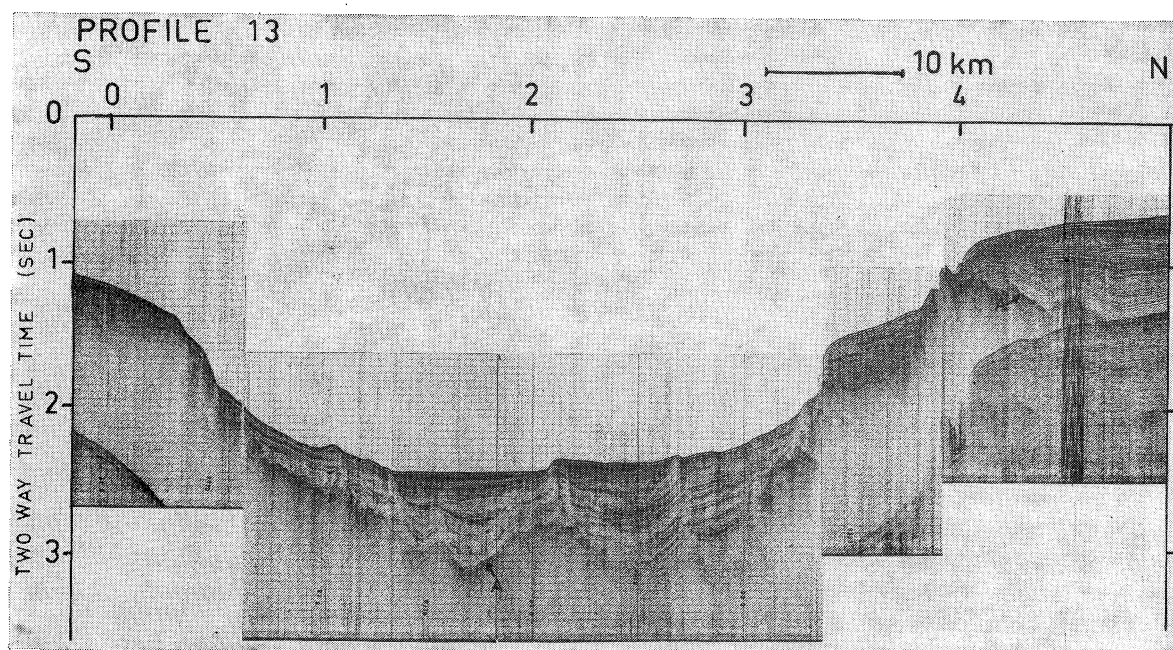
D. JONGSMA*, G. WISSMANN**, K. HINZ** and S. GARDE**

*University of Cambridge, U.K.

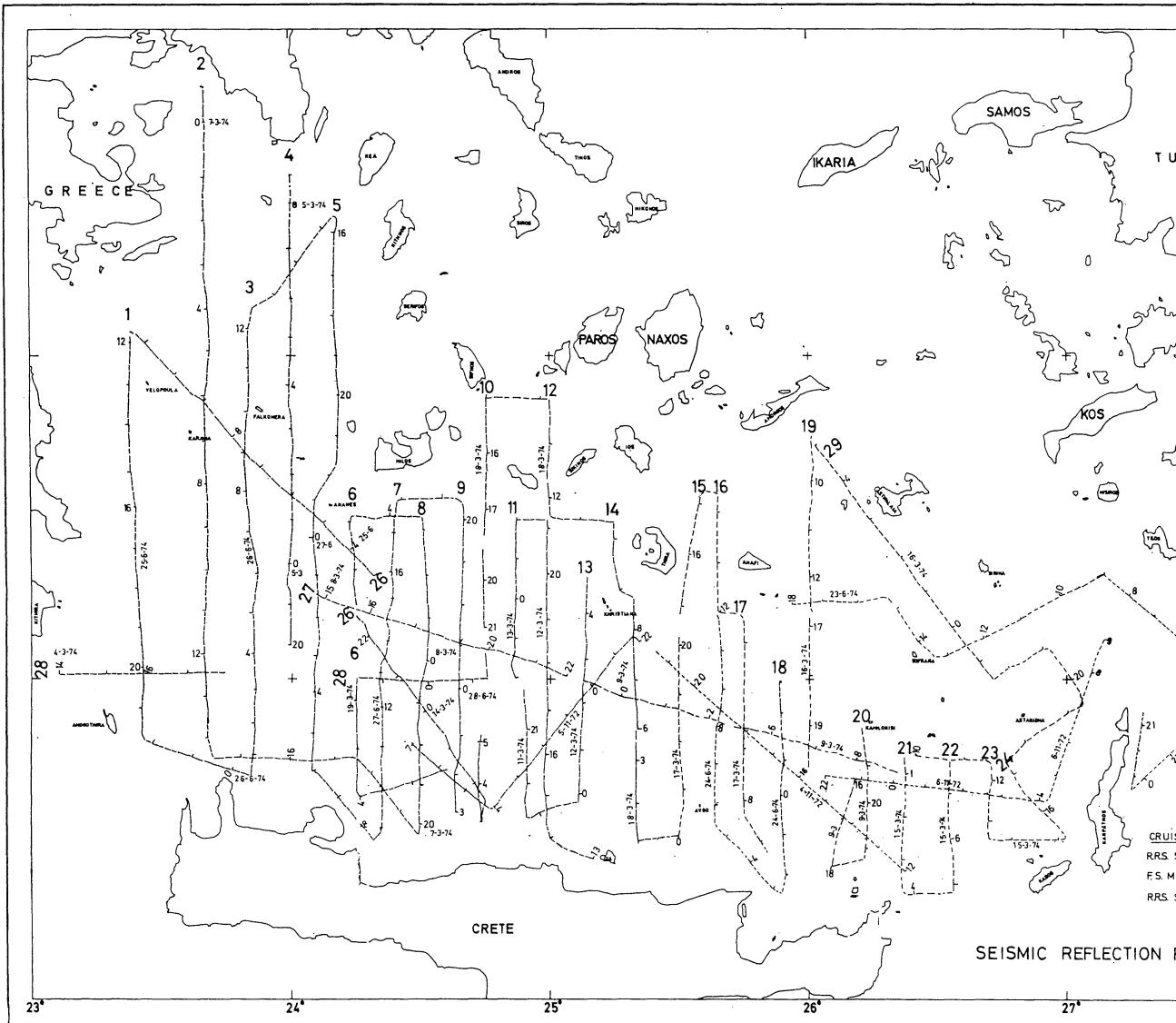
**Bundesanstalt für Geowissenschaften und Rohstoffe, Hannover (FRG)

A total length of 2600 n.m. of airgun reflection seismic profiling was carried out by the Bundesanstalt für Geowissenschaften und Rohstoffe, Hannover (*Meteor*-cruise 33/1974) and the University of Cambridge, U.K. (*Shackleton*-cruise 1972/1974) in the Southern Aegean Sea. Fig. 1 shows the location of reflection seismic lines.

Study of these data shows an erosional unconformity between basement rock and sediment which over most of the Cretan Trough corresponds probably to periods of erosion or non deposition after the main Alpine orogeny and prior to the late Tortonian. A profile across the Cretan Trough and including erosional unconformity, horizon A, is shown in Fig. 2. Up to 1.5 km thick sediments accumulated in local basins. Strong vertical movements on normal faults were responsible for the formation of the Cretan Trough and subsequently controlled the sedimentation. Sediments within the Trough have been deformed by Late Pliocene/Pleistocene faulting and folding. Quaternary intrusions of volcanic material are observed over the whole width of the Cretan Trough. Extensional processes are seen to be the dominant feature in the tectonics of this area.



Rapp. Comm. int. Mer Médit., 23, 4a, pp. 169-171, 2 figs., (1975).



From the observed shallow structure it is difficult to deduce geodynamic processes. Therefore we cannot decide between subduction induced horizontal tension and passive rifting caused by mantle diapirism.

*
* *

Discussion

Meulenkamp J. : I wish to congratulate Dr. HINZ and his collaborators with his results. However, some remarks should be added *in our* paper (DROYER & MEULENKAMP, 1973) we stated that "post-orogenic" basin development and marine sedimentation in Crete started during the middle Miocene. In the Late Tortonian a change took place from a terrigenous-clastic to a calcareous sedimentation. Therefore, be careful as regards the age of your A reflector. I don't think it to be late Tortonian. Also, I want to warn you as regards the age of the A reflection in the Karpathes trough. Actually, the base of the sediments succession here might be older than elsewhere, i.e. older than middle Miocene.

Krause D. : Do magnetic and gravity data confirm your interpretation of the lineas ridge as volcanic?

