

49. DETAILED SEISMIC STUDIES OF SEDIMENTARY STRUCTURE AROUND SITE 379, DSDP LEG 42B

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Detailed seismic measurements were carried out at the planned Site B-1 in the Black Sea Basin by the Southern Branch of the Institute of Oceanology on board R/V *Academic C. Vavilov* in the autumn of 1974. The continuous seismic profiling was made by using a "Sparker" type system which has a power rating of about 20 kilojoules and a time interval between sparks of 10 sec. The navigation during the survey was by radar fixes on an anchored buoy.

The area of survey was located in the central part of the Black Sea (Figure 1). The bottom relief is flat, and the depth is about 2160 meters. Six seismic profiles were made across Site 379, each having a length of about 20 km, and three profiles with a length of 40 to 50 km (Figure 2).

The penetration on seismic profiles was up to a sub-bottom depth of about 400-500 meters (Figure 3). Three units are seen in the seismic sections. The upper unit with a thickness from 240 and 400 meters has many thin layers with low dips of several meters per kilometer, toward the northeast direction. Drilling proved that this unit consists of a variety of oozes. The middle unit is not as well stratified. Its thickness is about 150 to 200 meters and gradually increases toward the south. Based on the drilling data, this unit consists mainly of turbidites. The top of the middle unit is separated sharply from the uppermost one by a thin stratified layer and is shown on Figure 3 by solid lines.

Based on the drilling data, this unit consists of dolomite-rich oozes.

The southern parts of profiles 8 and 9 are situated in an area of Arkhangelsky Ridge and the sedimentary layers are folded. There are other reported seismic profiling surveys in the Black Sea (Malovitsky et al., 1975; Sagalevich and Shehvatov, 1976; Terehov et al., 1971; Ross et al., 1974) which allow extrapolation of the drilling data from Site 379 over the entire area of the deep basin.

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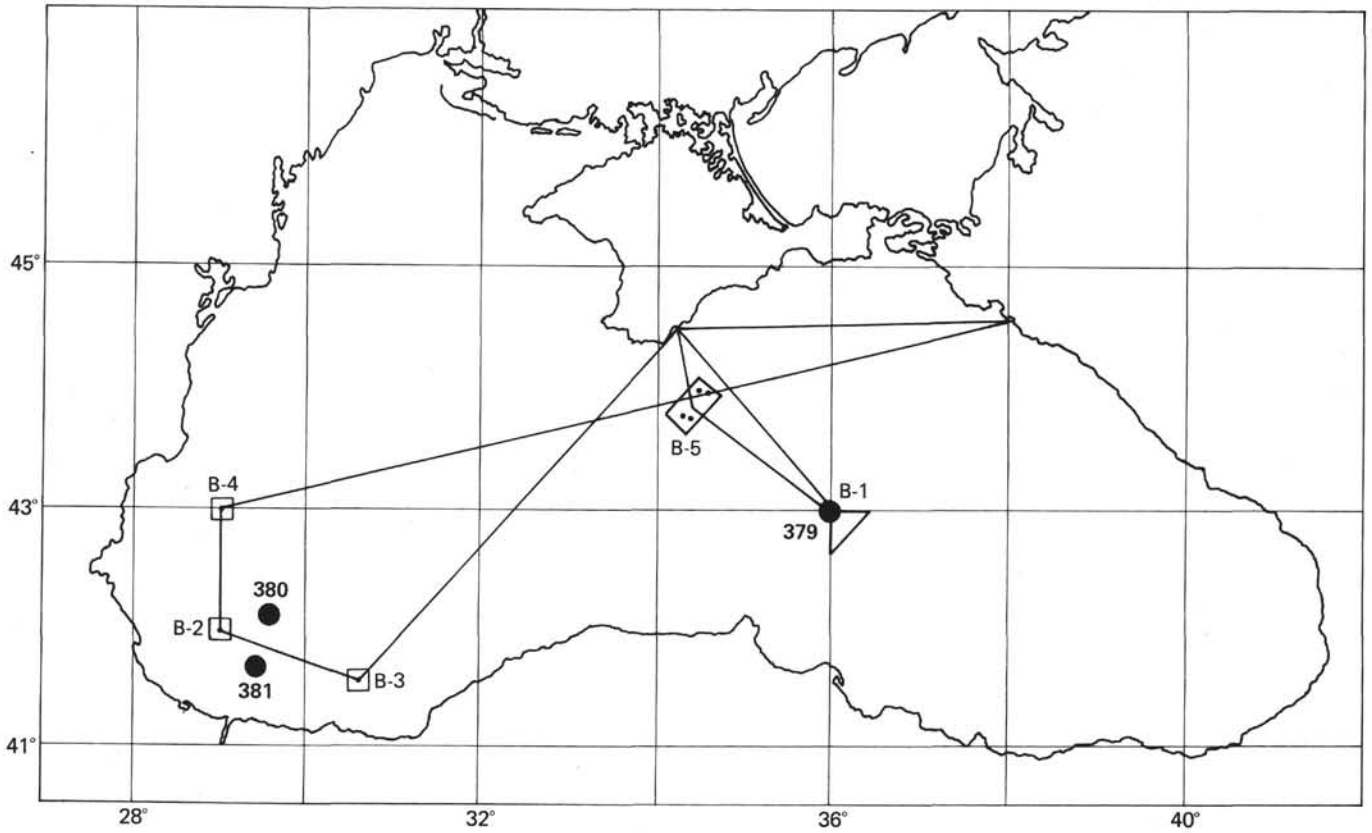


Figure 1. Location of the survey areas marked as triangles and quadrangles, and drilling sites in the Black Sea.

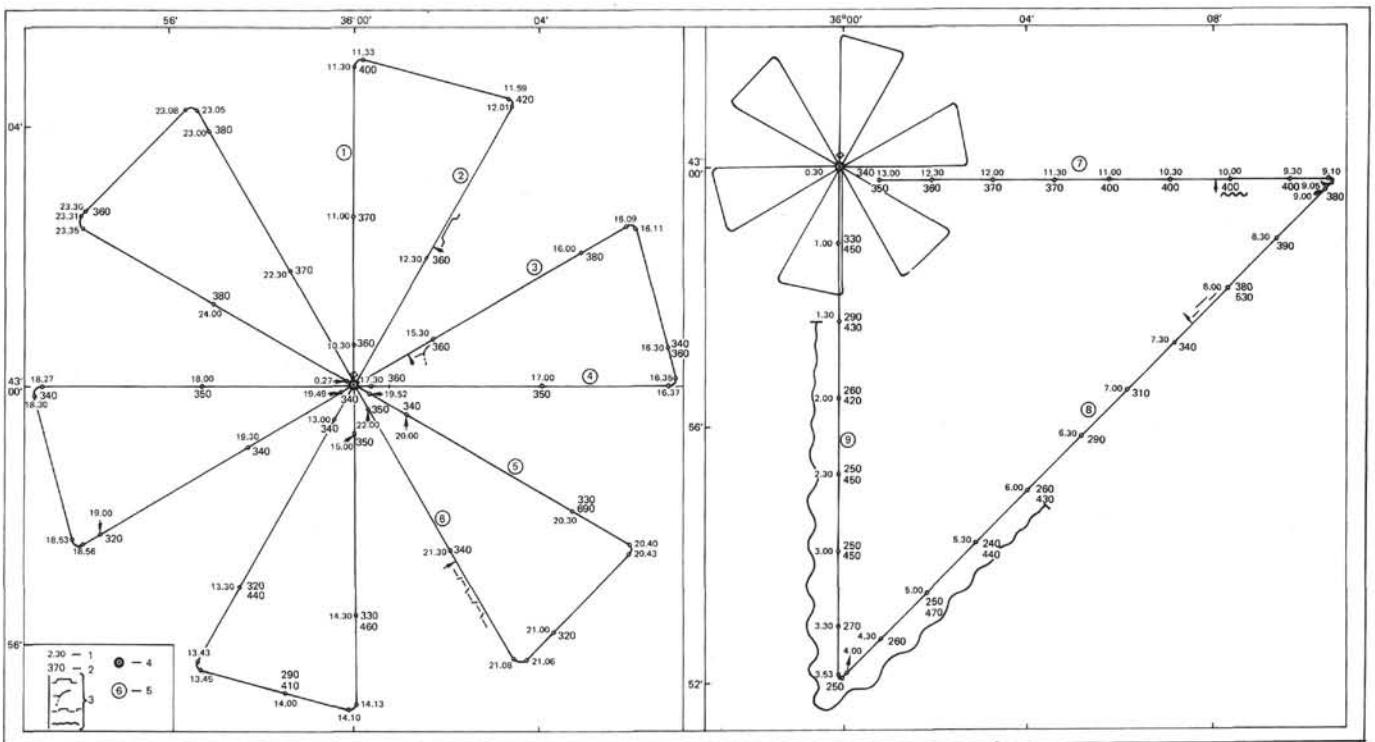


Figure 2. Track synopsis for the site survey. 1-time, 2-subbottom depth of the reflection discontinuity, which shows on the seismic sections (Figure 3) thick lines, 3-form of tectonic displacement in the sediments, 4-anchored buoy, 5-number of seismic profiles.

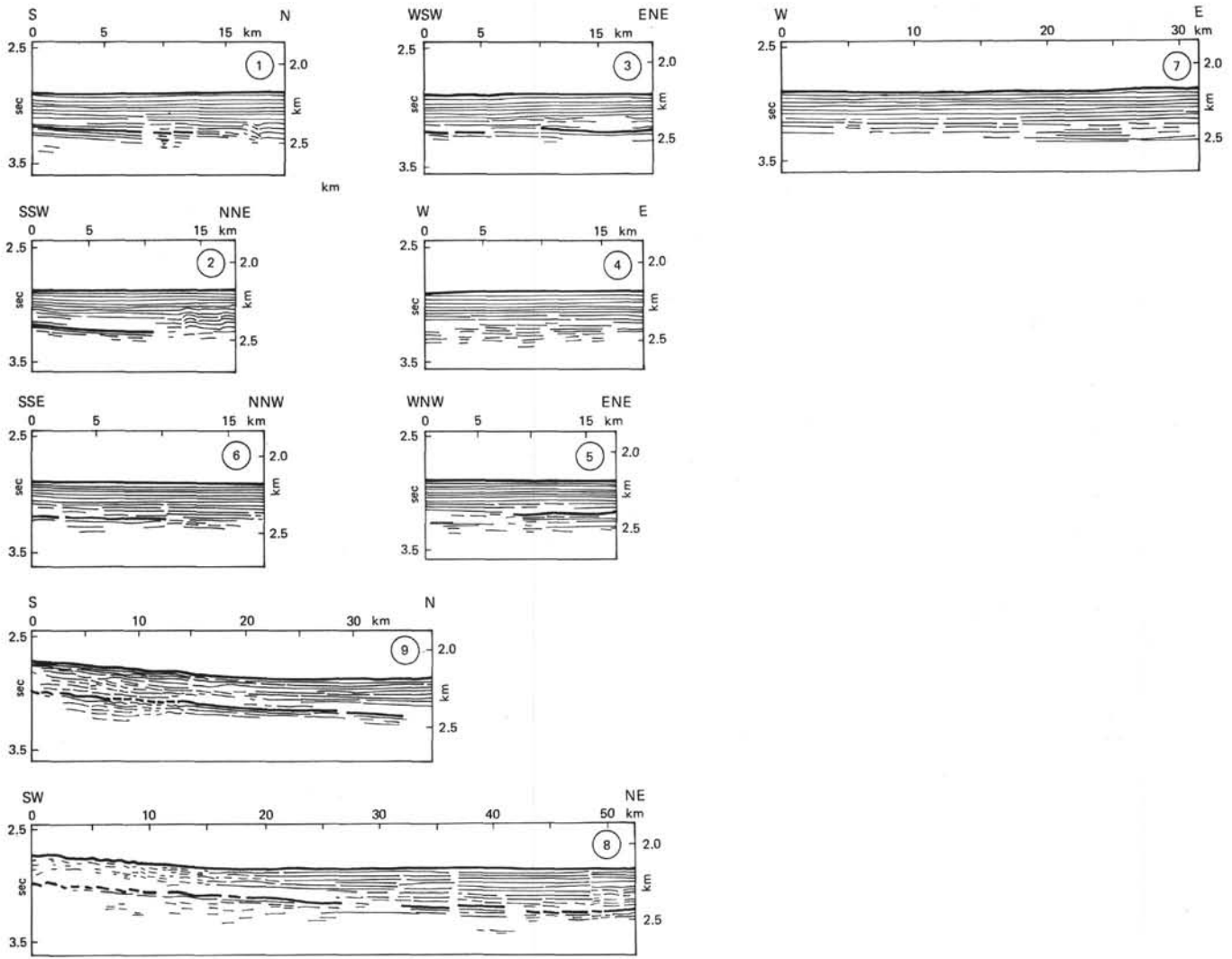


Figure 3. Seismic sections. See numbers in circles on Figure 2 for locations.