Ifremer

Plate : 11

SEA of MARMARA

Pasisar Seismic Sections

Data collected on board *R.V.* Le Suroît September 2000

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Technical team : Alban **CRUSSON**, Alain **NORMAND**,
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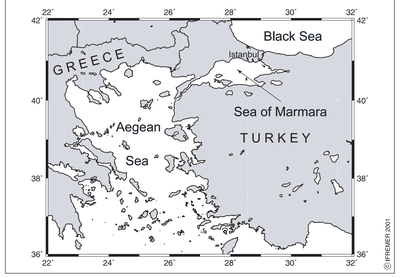
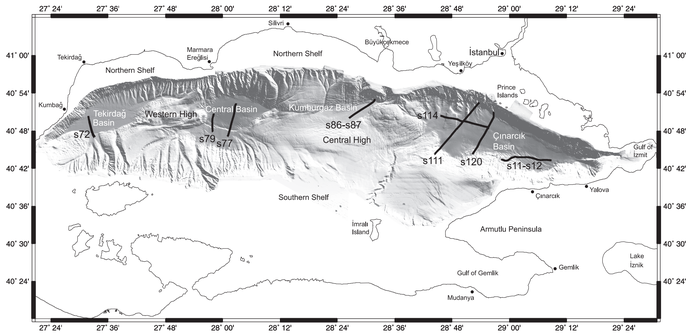
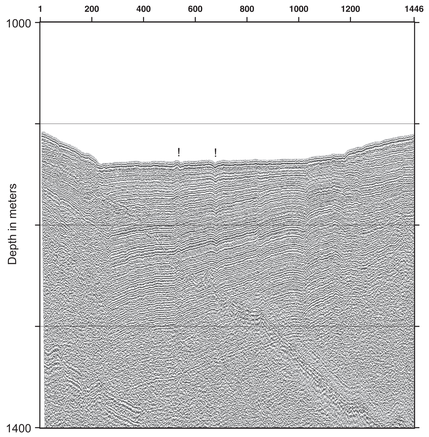


Location Map



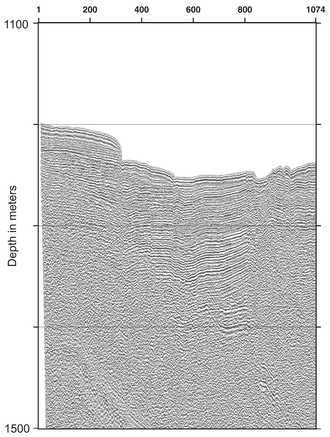
Tekirdağ Basin

S — Line-s72 — N



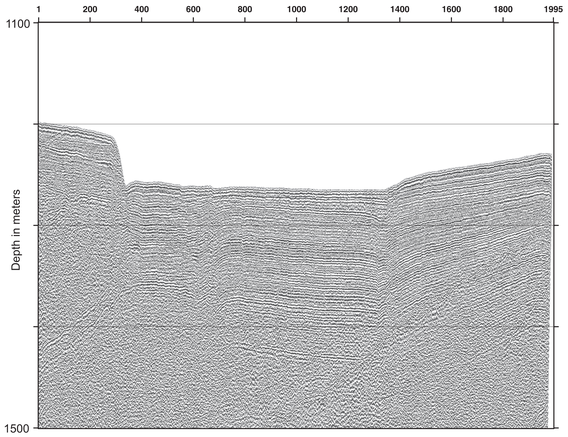
Central Basin

S — Line-s79 — N



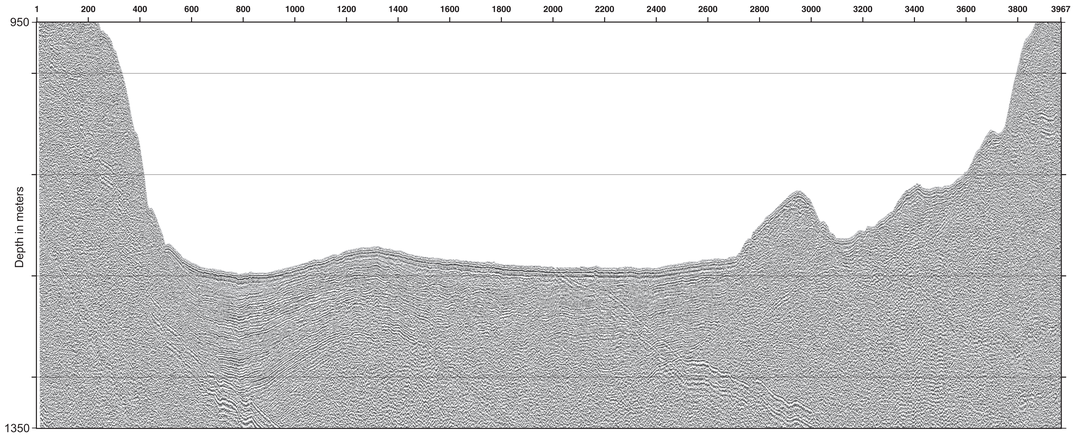
Central Basin

S — Line-s77 — N



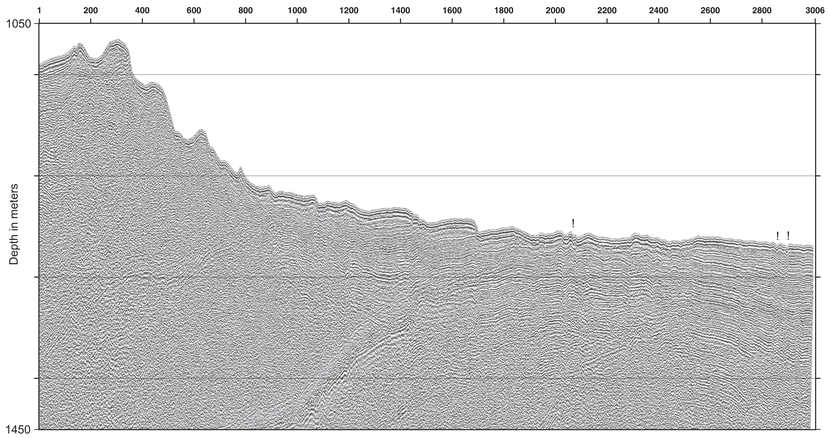
Western Çınarcık Basin

SW — Line-s111 — NE

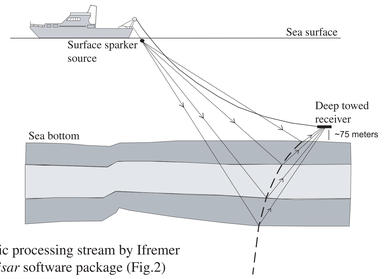


Southeastern Çınarcık Basin

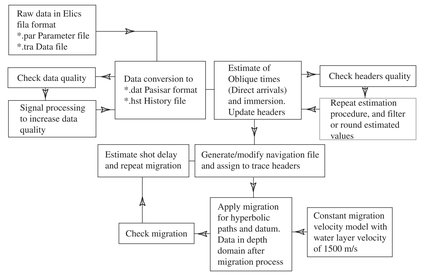
W — Line-s11-s12 — E



Geometry of data acquisition, trajectories of reflected rays and reflection points (Fig.1)

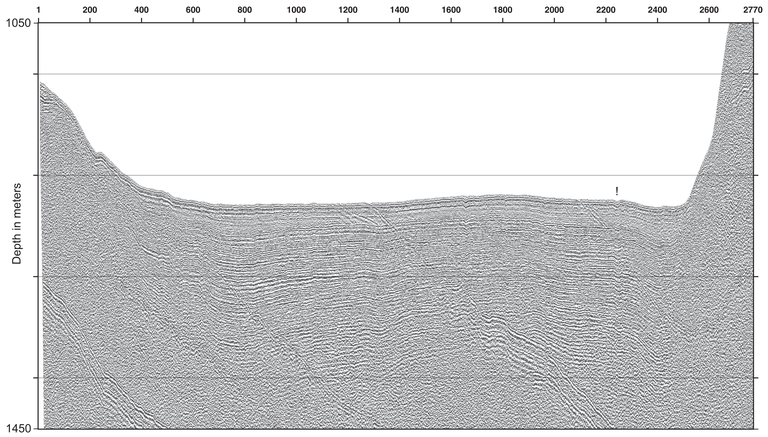


Basic processing stream by Ifremer
Pasisar software package (Fig.2)



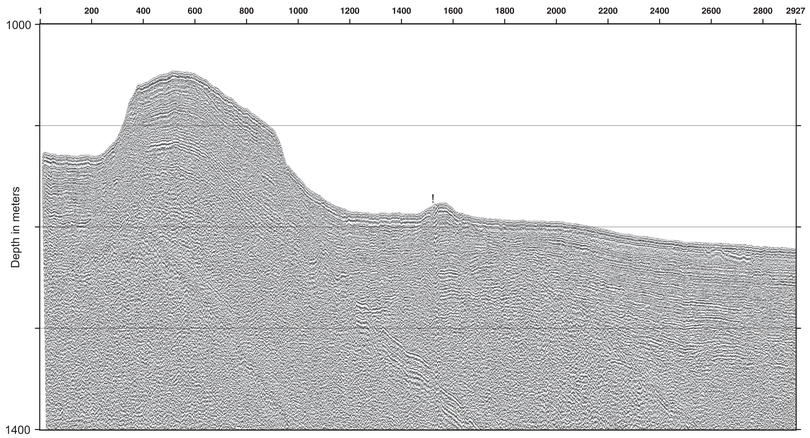
Central Çınarcık Basin

S — Line-s120 — N



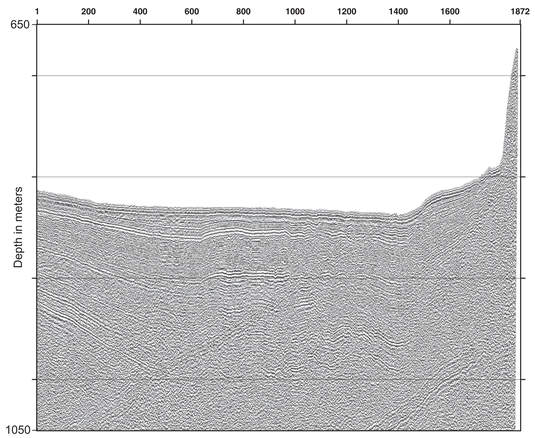
Western Çınarcık Basin

W — Line-s114 — E



Kumburgaz Basin

SW — Line-s86-s87 — NE



Pasisar seismic data were collected on profiles with total length of 700 km. The seismic sections in this poster are the results of unconventional data collection and processing methods developed by Ifremer. In the conventional seismic, the source and the receiver are towed near the sea surface. In this experiment, the receiver is towed at about 75 meters above the sea bottom. This way of data collection geometry introduces some advantages over the conventional seismic data collection at sea. In these data, the attenuation of the higher frequencies of the seismic signal is relatively less since the water column is crossed only once. This results in data with higher resolution both in vertical and horizontal direction. Furthermore, diffractions and out-of-plane reflections are less due to the geometrical considerations of the wave propagation. Therefore the collected data is more useful for active tectonic interpretation with respect to its surface collected counterpart. However, this type of reflection seismic data must be corrected for geometrical considerations before interpretation. Notice in Fig. 1 above that the trajectory of the reflected points on the interfaces follows a nonlinear path. Another difficulty arises due to the fact that the receiver has to be adjusted with respect to the bathymetry during operations. This causes the distance between the receiver and the shot continuously change during recording. Therefore the data must be unconventionally processed as shown in Fig. 2 for correction of the geometrical considerations as well as the signal quality and display. Sometimes the change of the receiver with respect to the sea bottom may be erratic, in this case the correction may not be well accomplished. This may result in artificial structures to appear in the section. Each section must be carefully checked against its surface collected counterpart where there are erratic changes in the depth of the receiver. Those anomalies marked with exclamation (!) signs in the sections are examples of such artificial anomalies. The vertical exaggeration is about 20. The numbers on top of the sections are the trace sequential numbers. Refer to the Atlas booklet for interpretational guide lines.