The foldout section crosses the centre of the Black Sea and lies north-north-west to south-south-east. Faulted continental crust is visible at the north-west end of the section. The deepest part of the basin is floored by 7 km thick oceanic crust recognisable by its thickness and seismic transparency above a semi-continuous Moho reflector. The transition zones between continental and oceanic crust (highlighted) differ somewhat from comparable transition zones in other parts of the world. East of the oceanic area is the Mid Black Sea High – a ribbon of continental crust intruded by magmatic rocks with volcanoes in the shallow section. In the extreme south-east of the line is the east Black Sea Basin, also floored by oceanic crust.

Transitional zones between continental and oceanic domains – presumably volcanic build ups – which essentially ‘onlap’ the collapsed continental margins, but they do not have the character of typical SDRs.
Different models of continental separation, leading to new ideas about the opening of the Black Sea. A range of potential hydrocarbon traps has been identified, including tilted fault blocks, stratigraphic traps and folds related to both gravitational and deformed tectonics.

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New Observations
The western Black Sea is traditionally thought to have opened behind a continental fragment, the Istanbul Zone, which drifted south between two transitions – the West Black Sea fault and the West Crimean fault. The northeast to south-west trending line in the southwestern Black Sea marks a middle dip fault and the inverted margin of Crimea almost certainly defines it, but there is no evidence of any transitions on the line in the centre of the western Black Sea Basin. Hyper-stretched continental crust in the north-western and south-eastern parts of the basin gives way to oceanic crust in the basin centre, implying a more complex opening pattern than previously thought. It seems that the western basin is comparable with the eastern Black Sea where stretched continental crust in the north-west gives way to oceanic crust southwards (Bildstein et al., 2008).

Future exploration will show whether the Black Sea basins are commercially attractive as they are tectonically, with world class source of oil for the future.

ICDN’s Black SeaSPAN™ is a deep 3D multi-client survey designed to better define the extent and potential of regional petroleum systems. The near high-quality data across the entire Black Sea will benefit hydrocarbon exploration across the basin. The Black Sea business provides unrivalled new insights into these compelling, prolific areas, offering alternative, existing cases for exploration.

A full list of references is available at geoexpro.com.