

BROAD STRUCTURE OF THE CENTRAL AND NORTHERN
NOVA SCOTIAN CONTINENTAL SHELF

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As is well known, the Orpheus gravity feature outlines the seaward extension of a major fault zone that cuts east-west across Nova Scotia from the Minas Basin to Chedabucto Bay. This fault zone is also reflected in the earth's magnetic field and recently available magnetic data indicate that there is generally magnetic material to the north of this zone and non-magnetic material to the south. Model studies of magnetic profiles over the east end of the Orpheus feature indicate that the magnetic basement is deeply buried and that the discontinuity is nearly vertical. Profiles over the Cobequid Highlands indicate that the contact dips to the south and that the minimum mean value of magnetization is about .001 emu. Samples of diorite and gabbro from the Cobequid Highlands exhibit this magnetization. Combined analysis of gravity and magnetic anomalies over the northern Scotian Shelf show that gravity lows often tend to correlate with magnetic highs and that significant remnant magnetization is often present in the basement rocks. Gravity and magnetic trends suggest a continuity of regional basement structure between southeastern Newfoundland and eastern Cape Breton Island.