

## **Oblique Caledonian continental collision interpreted from aeromagnetic data in Scandinavia**

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Precambrian structures on the Fennoscandian Shield can be traced on aeromagnetic maps below the Caledonian nappes to the western gneiss regions of Norway. These structures also appear in several of the parautochthonous windows within the orogen. The magnetic structures show a distinct pattern. The anomalies in southern Norway and the Nordland area are rotated c. 90° counterclockwise into the Caledonian trend along a line from western Norway to Troms in northern Norway (the Nordfjord-Trondheimfjord-Vestfjorden-Senja line). The anomalies in Finnmark in northernmost Norway, on the other hand, are rotated clockwise along a line from offshore Tromsø to Alta. We suggest that this structural pattern is related to the collision of Baltica and Laurentia during the main Scandian phase of the Caledonian orogeny. The line extending through the Caledonides from Nordfjord to Finnmark represents a boundary between two crustal blocks with different Caledonian reworking. The transition zone between counterclockwise and clockwise rotation coincides with the proposed bend of the Caledonian orogen in the southern Barents Sea. The western Caledonized unit extending offshore Norway most likely constitutes the template for the post-Caledonian rift structures. The eastern block demonstrates a less extensive modification during the Caledonian continent-continent collision. Reflection seismic lines (e.g., the Stjørdal-Østersund profile) reveal thrusting within basement windows in the eastern block. Several of these thrusts were subsequently reactivated as normal faults during late- to post-Scandian extensional deformation.