



## **Evidence for post-collisional extension in Central Svecofennian, Central Finland**

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Two deep seismic reflection profiles, FIRE 1 and 3a reveal the existence of post-collisional deformation in the Central Finland Granitoid Complex (CFGC) in the central Svecofennian. In the Svecofennian orogeny, the Proterozoic Central Finland (Keitele) was thickened due to westward stacking of 25 km thick crustal slices. Gravitational collapse took place in the upper parts of the continental stack and it is displayed as shallow, upper crustal extensional structures (3-8 km) cross-cutting the collisional structures.

FIRE 3a is characterized by shallow, SE dipping listric structures, which flatten out between the depths of 8 km and 10 km; these listric structures are imaged as subhorizontal reflections on FIRE1. The listric reflections broadly correlate with smooth NE trending changes in magnetic anomaly levels. On Fire 1, the subhorizontal reflections are transected by several NW-SE trending, relatively steep, NE or SW dipping lineaments, which define a graben-horst structure in the uppermost 8 km of the crust. These lineaments are seen as sharp magnetic minima on aeromagnetic anomaly maps.

It seems likely, that these shear zones and listric structures controlled the emplacement of at least some of the granites of the CFGC, probably under transtensional or extensional tectonic regime.