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From the Agulhas Plateau onto the Kaapvaal Craton: A geophysical transect encapsulating Africa's continental accretion history at its southernmost extremity.

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Within the framework of the German - South African geo-scientific research initiative *Inkaba yeAfrica* several geophysical onshore field experiments were conducted along the Agulhas-Karoo Transect in South Africa. This 600km long transect is designed to cross the Cape Fold Belt (CFB) with the Kango and Outshoorn Basin, the Namaqua-Natal Mobile Belt, the Karoo Basin and the transition onto the Kaapvaal Craton, and to probe more than 3 billion years of continental lithosphere tectonics. The Beattie Magnetic Anomaly and the Southern Cape Conductive Belt, two of the Earth's largest continental geophysical anomalies, are embedded in the Namaqua Natal Orogen and extend across the entire southern African continent in an east-west direction. Magnetotelluric and seismic imaging reveals structural details of both geophysical anomalies and the tectonic break between the Namaqua Natal- and the Cape Fold- Belts, at a scale of the entire crust. The maximum of the Beattie Magnetic Anomaly coincides with a narrow zone of high conductivity at 8 to 15 km depth, within a zone of high seismic reflectivity and high Vp velocity. The geophysical results suggest that the crustal architecture of the Namaqua-Natal Belt is much more complex as previously assumed. The upper to mid-crustal sections consists of northward dipping features including, large synforms of highly conductive material. On the other hand, the lower crust contains southward dipping reflectors. Further to the north a steep contact between the

Kaapvaal craton and the Namaqua-Natal Belt is observed.

The Cape Fold Belt are generally characterized by low electrical conductivities and high Vp velocities; by contrast the Mesozoic/Cenozoic intermontain basins of the Cape Fold Belt, (e.g. the Kango and Outshoorn Basins) appear as regions of high electrical conductivity and low Vp velocity anomalies.