

## **Tectonic History of the Superior Province**

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Scattered remnants of Mesoarchean crust and isotopic inheritance permit reconstruction of a ca. 3.0 Ga Uchi-Sachigo-Goudalie protocraton that had rifted by 2.92 Ga and collided with juvenile terranes by 2.81 Ga. The

Minor rock record that exists for the 2.79-2.75 Ga interval indicates oceanic plateau magmatism, possibly representing widespread production of ocean crust. Island arc-like sequences began developing in southern oceanic regimes ca. 2.75 Ga, as Andean magmatism started to cannibalize the northern protocraton. Arc terranes docked along the southern transpressional margin between 2.70 and 2.69 Ga, along with exotic continental blocks, forming two major collisional foredeep clastic wedges prior to terminal collision (ca. 2.69 Ga) with the Paleoproterozoic (3.6-3.4 Ga) Minnesota River valley continent in the south. At the northern margin, a Paleoproterozoic (3.7-3.3 Ga) Northern Superior superterrane was accreted with juvenile terranes by ca. 2.70 Ga. Although the crust was transiently thick, ductile collapse by ca. 2.65 Ga arrested erosion at 10-15 km levels. Pan-Superior granite magmatism, thermal resetting and deep-crustal extension at this time may reflect sub-cratonal lithosphere delamination. Where traced to surface in Proterozoic uplifts, midcrustal subhorizontal seismic reflectors correspond to late extensional structures rather than accretionary boundaries. Mantle reflectors could be crustal slabs preserved in stiff mantle.