

The High Arctic Large Igneous Province (HALIP) represents extensive subaerial and submarine Cretaceous magmatism throughout the circum-Arctic borderlands and within the Arctic Ocean (e.g., the Alpha-Mendeleev Ridge). New U-Pb chronology data for a dacite sample at the tholeiitic Hansen Point stratotype section on Ellesmere Island, Nunavut, Canada, yields a crystallization age of  $95.5 \pm 1.0$  Ma. Based on similarities in age and geochemistry, we ascribe the rocks of the Hansen Point stratotype section and other nearby tholeiitic rocks to a new suite called the Hansen Point tholeiitic suite (HPTS) which was emplaced at 97–93 Ma. The chronology and the geochemistry of the HPTS correlate well with the tholeiitic basaltic lavas, sills, and dykes of the Strand Fiord Formation on Axel Heiberg Island, Nunavut, Canada.

In addition, new U-Pb age for an alkaline syenite at Audhild Bay is significantly younger at  $79.5 \pm 0.5$  Ma and correlates to alkaline basalts and rhyolites from other locations of northern Ellesmere Island, such as Audhild Bay, Philips Inlet, and Yelverton Bay West; we ascribe these to a new suite called the Audhild Bay alkaline suite (ABAS), which was emplaced at 83–73 Ma. The few dredge samples of alkali basalt available from the top of the poorly characterized Alpha Ridge are akin to ABAS in terms of geochemistry.

Our revised dates suggest two distinct HALIP eruption events. Field observations by us and previous workers indicate both the Hansen Point and Strand Fiord events were part of the subaerial large igneous province (LIP) eruption, the timing of which is coincident with the late Cenomanian Cretaceous Ocean Anoxic Event 2 (OAE2). These results suggest a much broader subaerial LIP event than previously recognized occurred at that time and requires revision of models for OAE2 being driven by a submarine LIP. Dredge samples hint that the subaerial eruptive event was even more extensive, but further characterization of the Alpha Ridge is required.