
**Critical effects of the chronology and mode of
emplacement of flood basalts on the thermal history
of the Sverdrup Basin, Arctic Islands, Nunavut**

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Igneous rocks of the Sverdrup Basin Magmatic Province (SBMP) consist of voluminous hypabyssal intrusive sheets and dykes, flood basalts, and central volcanoes that were emplaced episodically from the Early Cretaceous to the Paleogene. In the east-central Sverdrup Basin, basaltic lava flows of Early Cretaceous age are found in the Isachsen Formation (Barremian-Aptian) and Strand Fiord Formation (Late Albian-Cenomanian). Although there is a clear spatial association between volcanic successions and the voluminous sills and dykes that intrude the Mesozoic section, the chronology of intrusive magmatism remains problematic.

We present new field and geochronological data from central Axel Heiberg Island that support the widespread emplacement of sills and dykes during the deposition of the Isachsen Formation. Our preliminary interpretation of the data suggests that the classic model of flood basalt volcanism proposed to explain magmatism in the Karoo Basin of South Africa, may be applicable to the SBMP. We will test several elements of this model using data collected in the East Fiord region of western Axel Heiberg Island during field expeditions carried out in 1990, 1993, and 2004 (Lat. 79°30'N; Long. 93°10'W). We discuss the predicted effects of the Karoo Basin model on the history of salt diapirism in the area surrounding Strand Fiord and Expedition Fiord.
