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**The Satorsoakulluk ferrodiorite dyke of the  
Nain Plutonic Suite, Labrador**

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Satorsoakulluk arcuate dike is a component of the Nain Plutonic Suite (NPS) that extends in a belt up to 0.5 km wide and at least 15 km long and averaging 300 m thick in the vicinity of Nain, Labrador. The NPS is one of the best examples of an AMGC suite (anorthosite, mangerite, orthopyroxene-bearing monzonite and granite, charnokite- pyroxene granite); such suites are distinctive features of Earth's history between 1.0 to 2.5 Ga. These large anorthosite complexes are generally considered to have formed in anorogenic environments, and are mainly composed of anorthosite, leuconorite, troctolite, and granite with Na-rich plagioclase ranging from An<sub>60</sub> to An<sub>40</sub>. The anorthositic rocks are commonly referred to as massif-type anorthosite, which form spatially associated complexes. Massif-type anorthosite bodies including the NPS, are generally considered to have been emplaced as diapirs, though recent detailed structural investigations of anorthosite/country rock relations suggest emplacement by stoping mechanisms. A more extensive reinvestigation of a transect across the NPS by J. Myers (Memorial University of Newfoundland) has indicated that the diverse plutons of anorthosite and associated rocks are intruded into a belt of transcurrent faulting with space for rising magmas generated by faulting and stoping. Small-scale evidence of stoping is generally removed during ongoing emplacement of large bodies of magma. Evidence of stoping is most widely preserved as xenoliths of country rocks within plutons as well as fragments of older plutons in younger plutons. The Satorsoakulluk dike contains diverse xenoliths and is associated with net veining and fragmentation of country rocks. This intrusion provides excellent examples of intrusion mechanisms within the NPS and provides insight into how other associated rocks of the NPS were emplaced. The overall structure of this ferrodioritic dike is difficult to identify due to lost exposure into the sea; however, 11 km of this unit gently

curves and dips 50 to 60 SSE. It has been labelled as a ring dike. However, the moderate dip of the margin in its concave direction does not support typical ring dike structure. The body more resembles a segment of a cone sheet, although it is unclear where it may terminate or continue. This ferrodiorite body may have a possible eastern extension on the western shore of South Aulatsivik Island, as suggested by earlier workers in the area; however, this interpretation still remains uncertain despite recent reinvestigation. More research is needed on the Newark Island region north of Aulatsivik Island to determine whether the Satorsoakulluk dike may be a feeder dike into the Newark Island layered intrusion.