



U-Pb geochronology and paleomagnetism of the Neoproterozoic St Simeon dolerite dykes, Quebec: an eastern Laurentian perspective of Ediacaran Rodinia breakup

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The St Simeon (SS) mafic dykes (150 km NE of Quebec City) are now dated at 548 ± 1 Ma (U-Pb; baddeleyite). This age is similar to a published LA-ICPMS zircon age of 550 ± 7 Ma for the Mt. St-Anselme (MS) basalts, which supports previous inferences of (i) a genetic relationship between them, (ii) the pene-contemporaneity of OIB-type mafic magmatism in East Laurentia and (iii) the existence of two late Ediacaran plumes that attended the final breakup of Rodinia and opening of the Iapetus Ocean and Tornquist Sea. Both the SS dykes and the MS basalts were sampled for paleomagnetic study. The paleomagnetic pole for SS is similar to the previously published pole for coeval basalts (Skinner Cove, SC) from Newfoundland. Unlike SC, the St Simeon pole represents rocks which are unambiguously coherent tectonically with the Laurentian Craton. This new pole is also coeval with high quality poles from the Winter Coast (Baltica) and provides paleomagnetic constraints on the history of the final breakup of Rodinia and opening of Eastern Iapetus and Tornquist Sea.