The sense of a magnetic polarity change in the Melville Bugt dyke swarm of western Greenland has been obtained from precise U-Pb dating of baddeleyite. A southwest-directed down magnetization is older (1635±3 Ma) than an upward, northeast-directed remanence (1629±1 to 1611±3 Ma). Assuming only one polarity change during this interval, the same field reversal may be recorded by the 1630 Ma Sipoo dykes of Finland, where approximately antipodal remanences of similar direction have the same relative age from magnetic overprinting studies (Mertanen & Pesonen 1995). This observation, together with a comparison of published paleomagnetic pole positions between Laurentia and Fennoscandia (e.g. Pesonen et al. 2003), suggest that at 1.6 Ga, within the latitude provided by pole position uncertainty, Greenland may have been in such a position to allow the Melville Bugt dyke swarm to trend towards the 1.5-1.6 Ga Fennoscandian Rapakivi Province, allowing conjecture that the dyke swarm was fed laterally from this magmatic centre. Satellite imagery from southeast Greenland shows several north-northwest-trending dykes that may represent a southerly continuation of the Melville Bugt swarm, necessary if the dykes are to have a source in Fennoscandia. We highlight the importance of precise U-Pb dating to obtain both the age and the sense of a reversal. If the same reversal and its sense of polarity change can be identified in another continent, and if a fit is to be made between them, then any polarity ambiguity is removed.