

A paleomagnetic study of stratigraphic relations in the lava pile of Norðurárdalur and Austurdalur, Skagafjörður, North Iceland

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Abstract — *We present results of stratigraphic mapping in volcanics of Late Miocene age in valleys south of the Skagafjörður fjord, North Iceland. The strata of six mountainside profiles in the area are shown in detail in a composite diagram. In these profiles, 250 lava flows have been sampled for laboratory paleomagnetic measurements of remanence directions and intensities. The directions were employed as an aid in stratigraphic correlations between the profiles, along with significant sedimentary horizons and other geological evidence. It appears that the build-up of the lava pile in the area was rather episodic, often with 2-6 lavas having been emplaced in rapid succession. A composite section consists of a lava pile of over 1.7 km thickness, recording 9 geomagnetic polarity reversals as compared to 17 in a similar pile of the same age range in the valleys of Eyjafjörður. A single radiometric age determination in the uppermost part of our composite section yields a date of 5.2 million years, a considerably younger age than expected from previous studies to the north and east of the Skagafjörður valleys. We discuss various implications of these results, including in particular the possible presence of unconformities in the area.*