



## **Onset of syn-breakup volcanism in the NE Atlantic by explosive basaltic pyroclastic eruptions: Anatomy of the Late Palaeocene Sørvágsfjörd volcanic complex, Faroe Islands**

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We report on the basaltic Sørvágsfjörd volcanic complex (SVC) at the base of the Malinstindur Fm in the Faroe Islands Basalt Group. This ~1.5 km wide and ~90 m high structure is exposed in a sea cliff on Vágur Island. The structure rests on fluvio-lacustrine sediments of the Prestfjall Fm and it represents a positive paleo-relief overlapped by flood basalts. The SVC composite stratigraphic sequence includes from base to top: i) volcanoclastic sandstone grading into bedded tuffs, ii) agglomerates, iii) two ignimbrite units, iv) erosion surface, v) paleosol bed, in places replaced by lahar/debris flow, vi) ignimbrite unit, vii) agglomerate, viii) two ignimbrite units, ix) erosion surface. The complex is faulted and intruded by stacked sills, dykes and irregular plugs. On nearby Tindhólmur islet (1.5 km SSW) a paleo-valley incises the Prestfjall Fm, is filled with lava flows and overlain by lahars and ignimbrites. Another younger and deeper paleo-valley incises the lahar/ignimbrite sequence and is subsequently filled by lavas, mega-breccia, and lahars (and re-incised). Both valleys are buried by the Malinstindur Fm. The SVC records a significant explosive volcanic period characterized by two phases that both include near-vent agglomerates and pyroclastic density currents. The explosive volcanism was preceded by regional uplift, faulting, erosion and valley incision, followed by construction of positive volcanic relief, erosion and continued uplift due to intrusion activity, erosion and valley incision prior to burial. The SVC is unique within the North Atlantic Igneous Province and important to the tectono-volcanic evolution during the transition from pre- to syn-breakup magmatism.