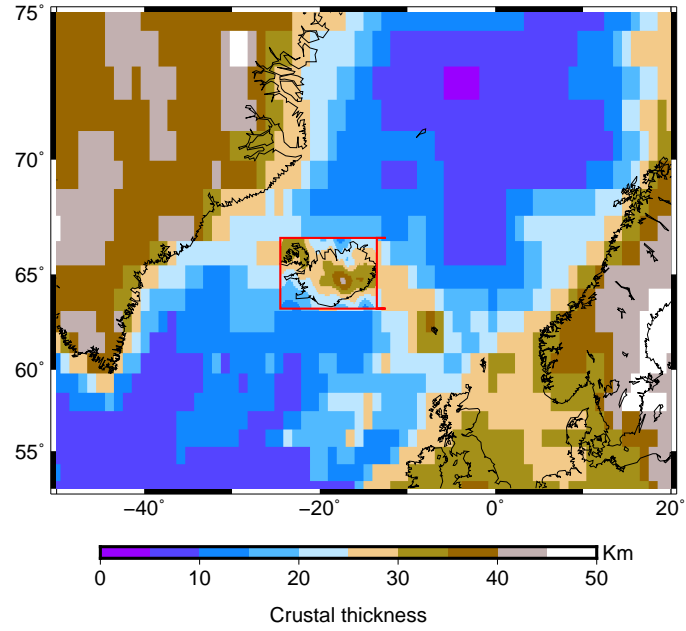
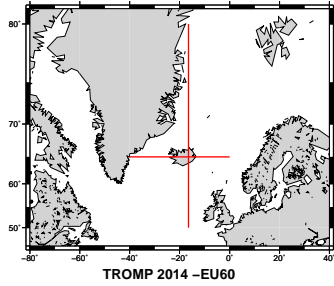


Supplimentary Material

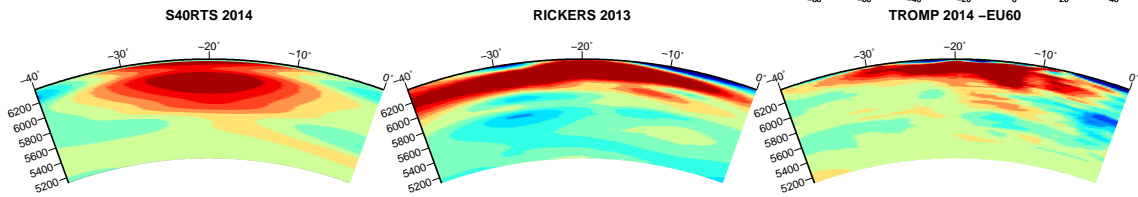
August 18, 2015



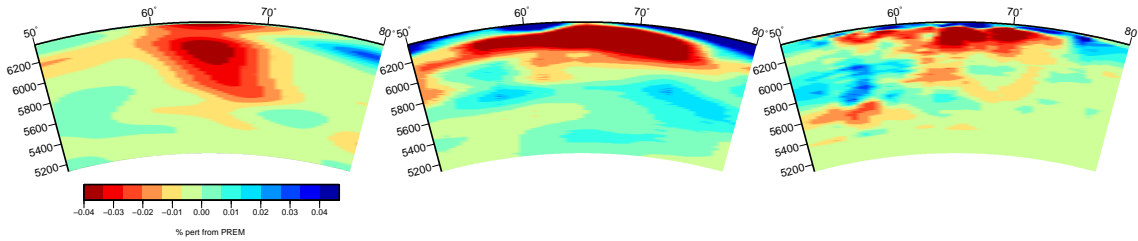
S 1: Map of crustal thickness variation across the north Atlantic based on the two models used to account for this in RF time–depth conversions. Within Iceland crustal thicknesses from the high resolution model of Darbyshire et al. (2000) are shown, the limits of which are delineated with a green box. The surrounding region shows CRUST 1.0, a global model of crustal thickness variation described on a 1 by 1 degree grid (Laske and Pasyanos, 2013).



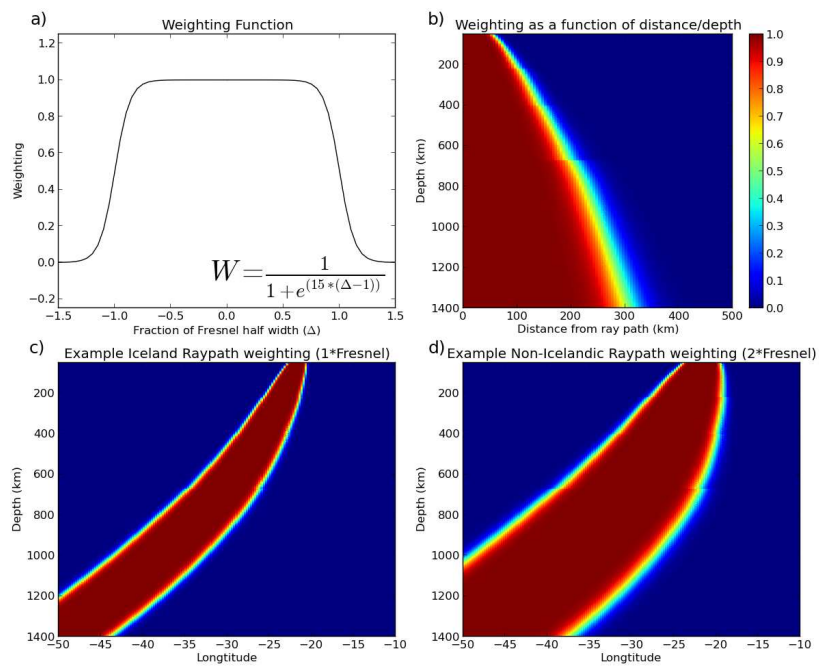
East–West sections



North–South sections



S 2: N–S and E–W cross-sections through the 3 tomographic models used for RF time–depth corrections: the global model S40RTS (Ritsema et al., 2011); the continental scale adjoint tomographic model EU60 (Zhu et al., 2015); and the regional adjoint tomographic model of the North Atlantic by Rickers et al. (2013).



S 3: a) Graph of weighting function used in 3D RF stack across the fresnel zone of the ray path, as described by equation; b) Weight with distance from raypath at different depths, showing increasing in width with depth; c) Example of weighting along a raypath for an event recorded within Iceland and d) outside of Iceland where weighting is distributed across 2x the fresnel zone for greater smoothing.