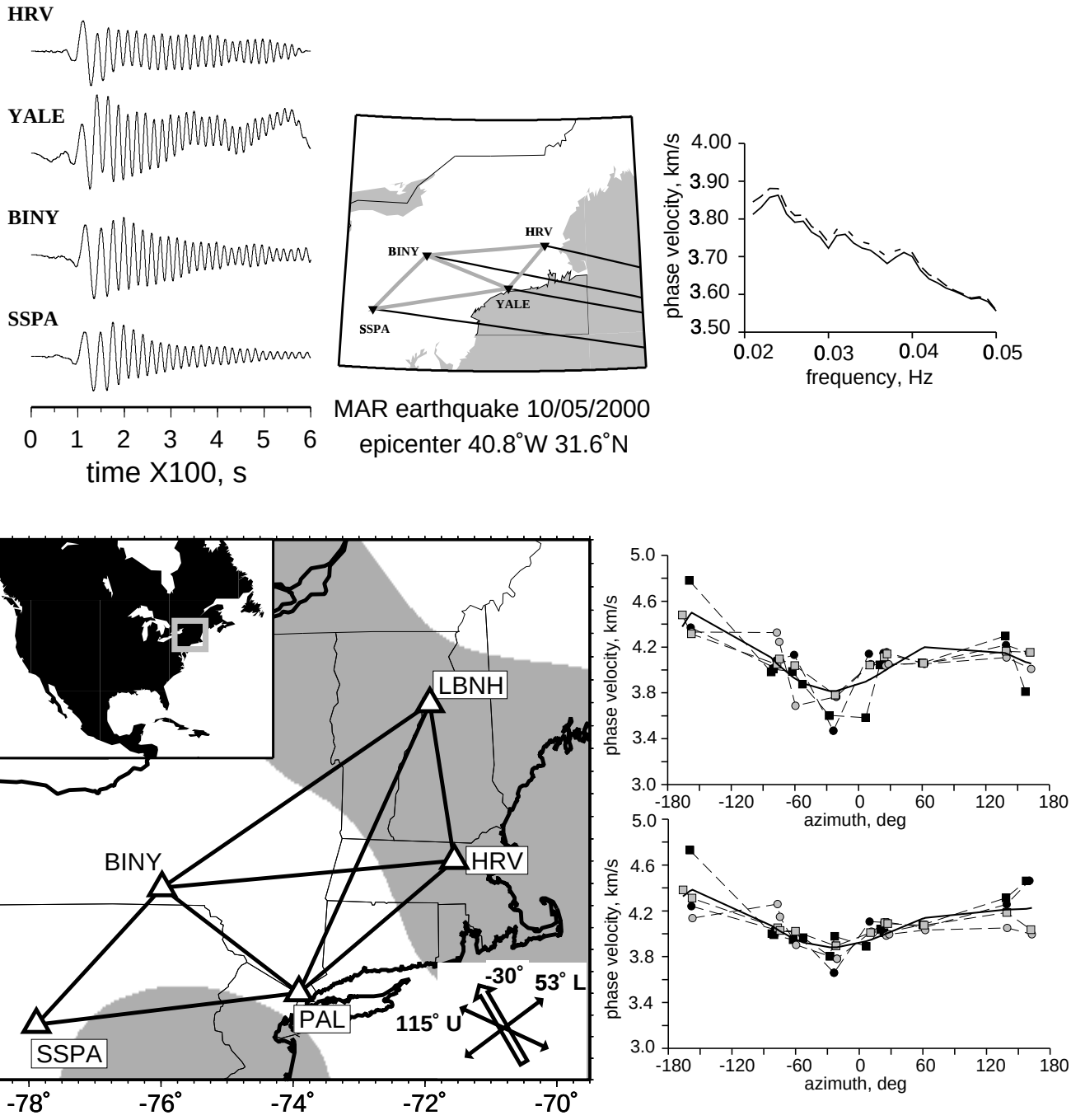

Figure 3. *UPPER PANEL (left)* Well-dispersed Raleigh wave from a Mid-Atlantic Ridge earthquake observed on four vertical-componen broadband stations in Northeastern US. *(middle)* Map showing four stations (HRV, YALE, BING, SSPA), which define southern and northern trianges. *(right)* Local estimate of phase velocity for each triangle, computed with the differential phase method. Note that the northern triangle (solid curve) has systematically lower velocities. *LOWER PANEL (left)* Map of broadband seismic stations (triangles) in northeastern US grouped into four triangular three-station arrays that are used to make local measurements of Rayleigh wave phase velocity, as follows: (T1) PAL-BINY-HRV; (T2) PAL-SSPA-BINY; (T3) PAL-HRV-LBNH; (T4) BINY-HRV-LBNH. Shading shows an area of NA95 model (*Van der Lee and Nolet*, 1997) where shear wave velocity is below 4.35 km/s at 100 km depth. Orientations of anisotropic symmetry axes in two layers of mantle fabric (*Levin et al.*, 1999) are shown by solid arrows (U - upper; L - lower). An open arrow shows the shallowing of the lithosphere-asthenosphere boundary towards 30 deg NW inferred in this study (*Menke and Levin*, 2001). *(right)* Variation of the average phase velocity with azimuth for four trianges, in the 75-100 s period range (upper plot) and 35-50 s period range (lower plot). Each symbol represents a single earthquake observed on a single triangle of stations (black circles, T1; black squares, T2; grey circles, T3; grey squares, T4; see Figure 3 for triangle definitions). The bold curve is a smooth polynomail fit to all the data.