



Supplementary Material

# Deformation of the Crust and Upper Mantle beneath the North China Craton and Its Adjacent Areas Constrained by Rayleigh Wave Phase Velocity and Azimuthal Anisotropy

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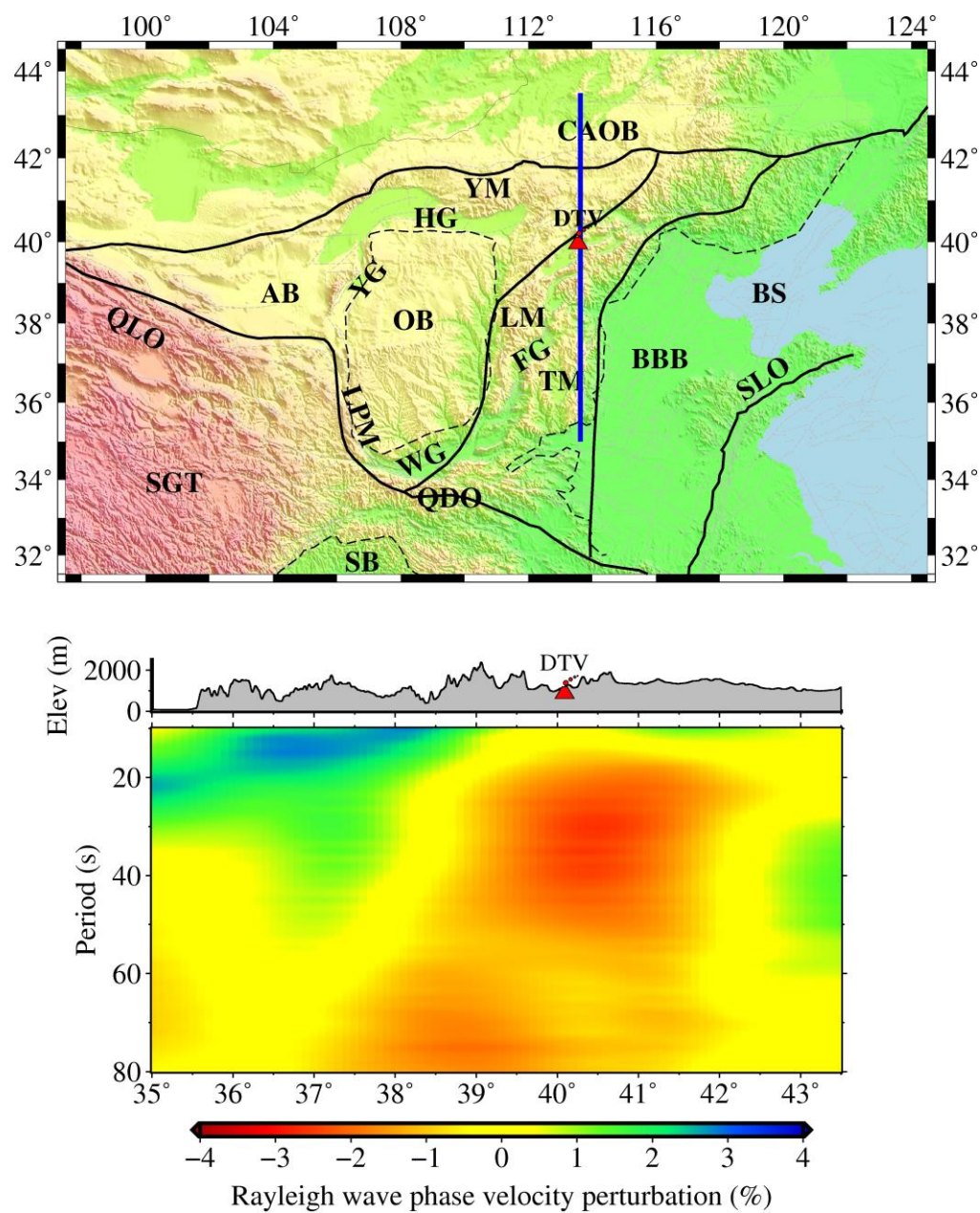
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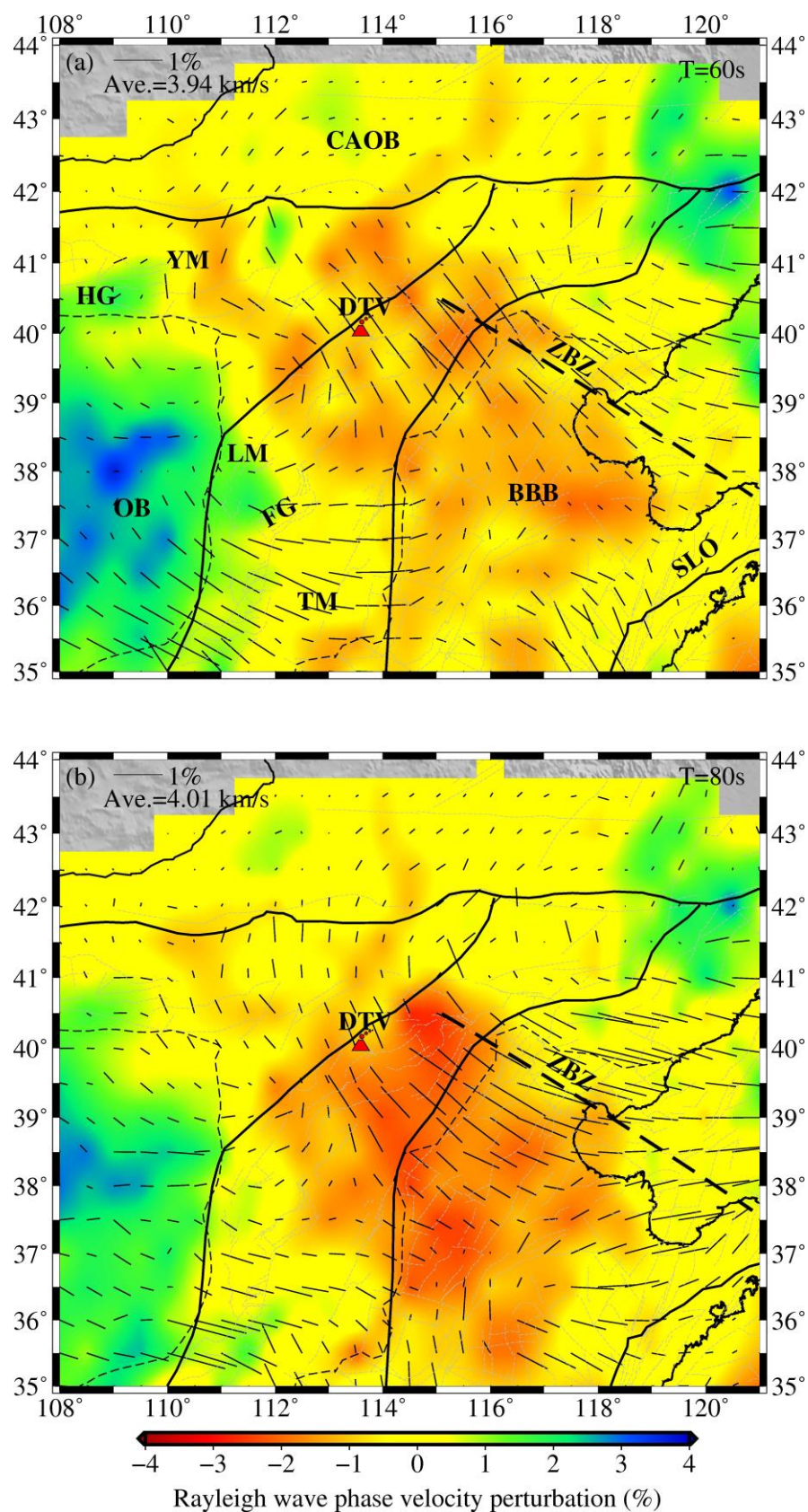
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## Content of this file

Figures S1 to S4

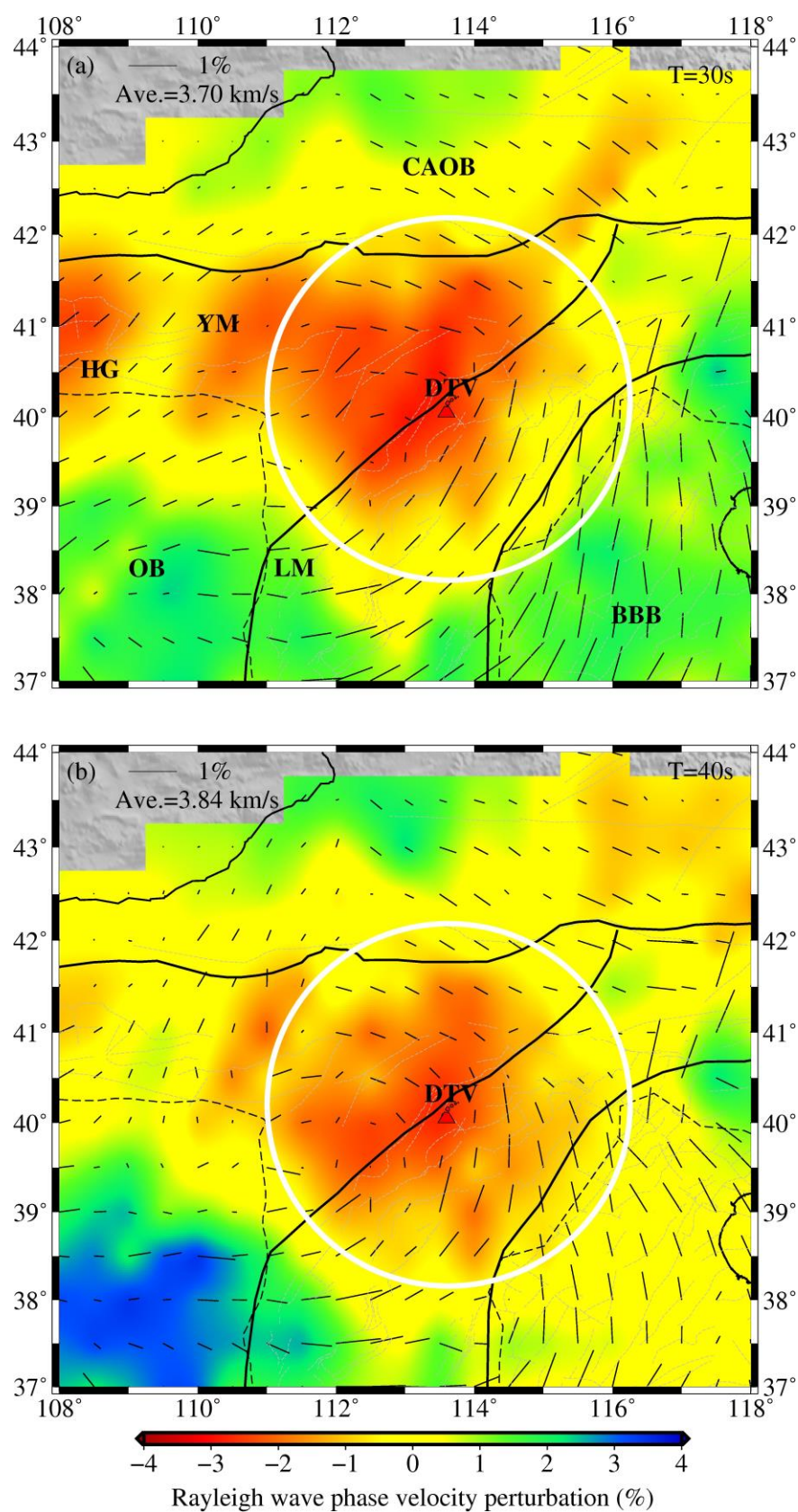


**Figure S1.** Schematic of the asthenospheric upwelling beneath the Datong volcano. (a) Map of the study area, indicating the location of the profile shown in (b). The abbreviations of geological blocks are defined in the caption of Figure 1. (b) Vertical profile of Rayleigh wave phase velocity.

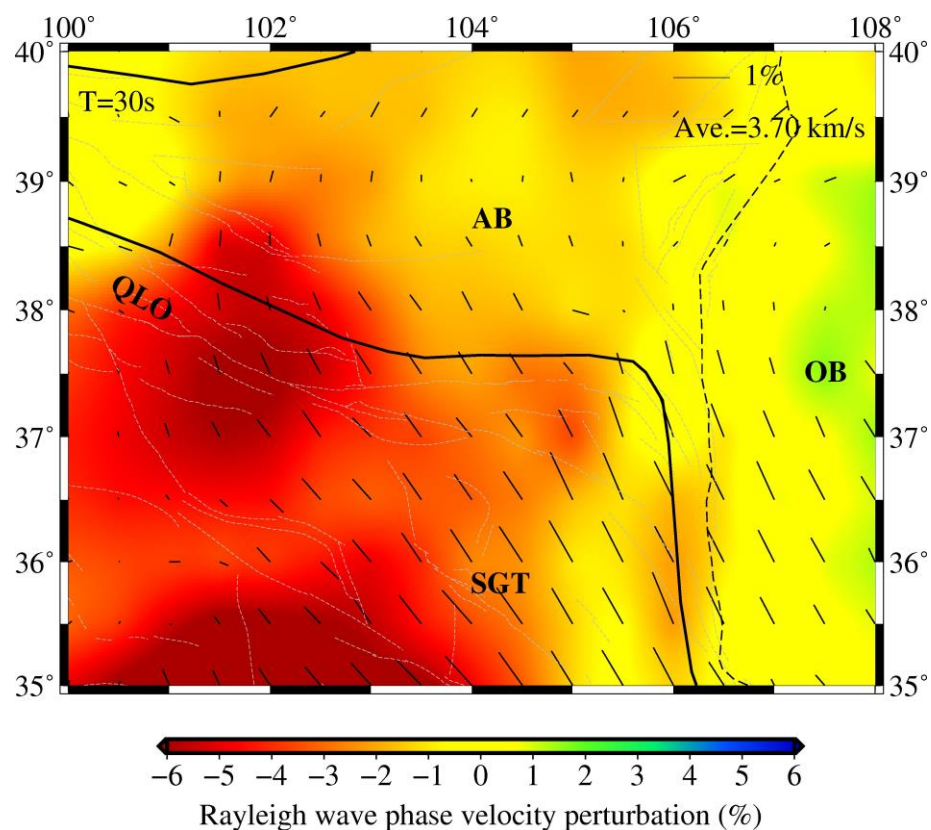


**Figure S2.** Refined Rayleigh wave phase velocity and azimuthal anisotropy at 60 and 80 s periods indicating the horizontal flow of the asthenosphere. The abbreviations of geological units are defined in the caption of Figure 1. The black error bar denotes the magnitude and fast wave direction of azimuthal anisotropy. The average Rayleigh wave phase velocity (Ave.) at each period is shown in the corresponding panel.





**Figure S3.** Refined Rayleigh wave phase velocity and azimuthal anisotropy at 30 and 40 s periods indicating the rotating fast axis around the Datong volcano. The abbreviations of geological blocks are defined in the caption of Figure 1. The black error bar denotes the magnitude and fast wave direction of azimuthal anisotropy. The average Rayleigh wave phase velocity (Ave.) at each period is shown in the corresponding panel.



**Figure S4.** Refined Rayleigh wave phase velocity and azimuthal anisotropy at 30 period indicating the discontinuous low velocities in the northeastern margin of the Tibetan plateau. The abbreviations of geological blocks are defined in the caption of Figure 1. The black error bar denotes the magnitude and fast wave direction of azimuthal anisotropy. The average Rayleigh wave phase velocity (Ave.) at 30 s period is shown in the figure.