



Supplement of

Moho and uppermost mantle structure in the Alpine area from S-to-P converted waves

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Most seismic profiles in the main paper have used seismic traces within a bin of one degree latitude or longitude (depending on profile direction) perpendicular to the profile direction. The bin width in profile direction was in all cases 0.2° in latitude or longitude. The bins did not overlap. This leads to a high resolution in profile direction but a lower resolution perpendicular to the profile direction. The quality of the summation trace of all traces within a bin depends on the number of traces within one bin. Therefore the choice of the bin size depends on the number of available traces and one has to find a compromise between both. Of course, if the station density is higher and recording time longer, smaller bins resulting in higher resolution are possible. In the main paper we discarded bins with less than 200 traces. The purpose of the following figures is to show that also profile widths of half a degree still produce good results in within our network. The widths of the profiles are marked at the bottom of the figures. Here we accepted only bins with more than 80 traces. The signal-to-noise ratio is therefore reduced, but we think the results are still very useful.

The profiles on the left (A) use bins located at 50 km depth with theoretical piercing point depths there. The profiles on the right (B) are for piercing points at 100 km depth. That means the left side figures are approximately focused at the Moho, whereas the profiles on the right are more focused on the uppermost mantle. In some of the figures we have marked examples of Moho observations by a dashed black line. Examples of the lower boundary of the NVGs are marked by less clear defined grey lines. This is to point out that the onsets of the NVG (Negative Velocity Gradient) converted signal are usually much less correlated laterally than for example the Moho signals.

North-South Profiles

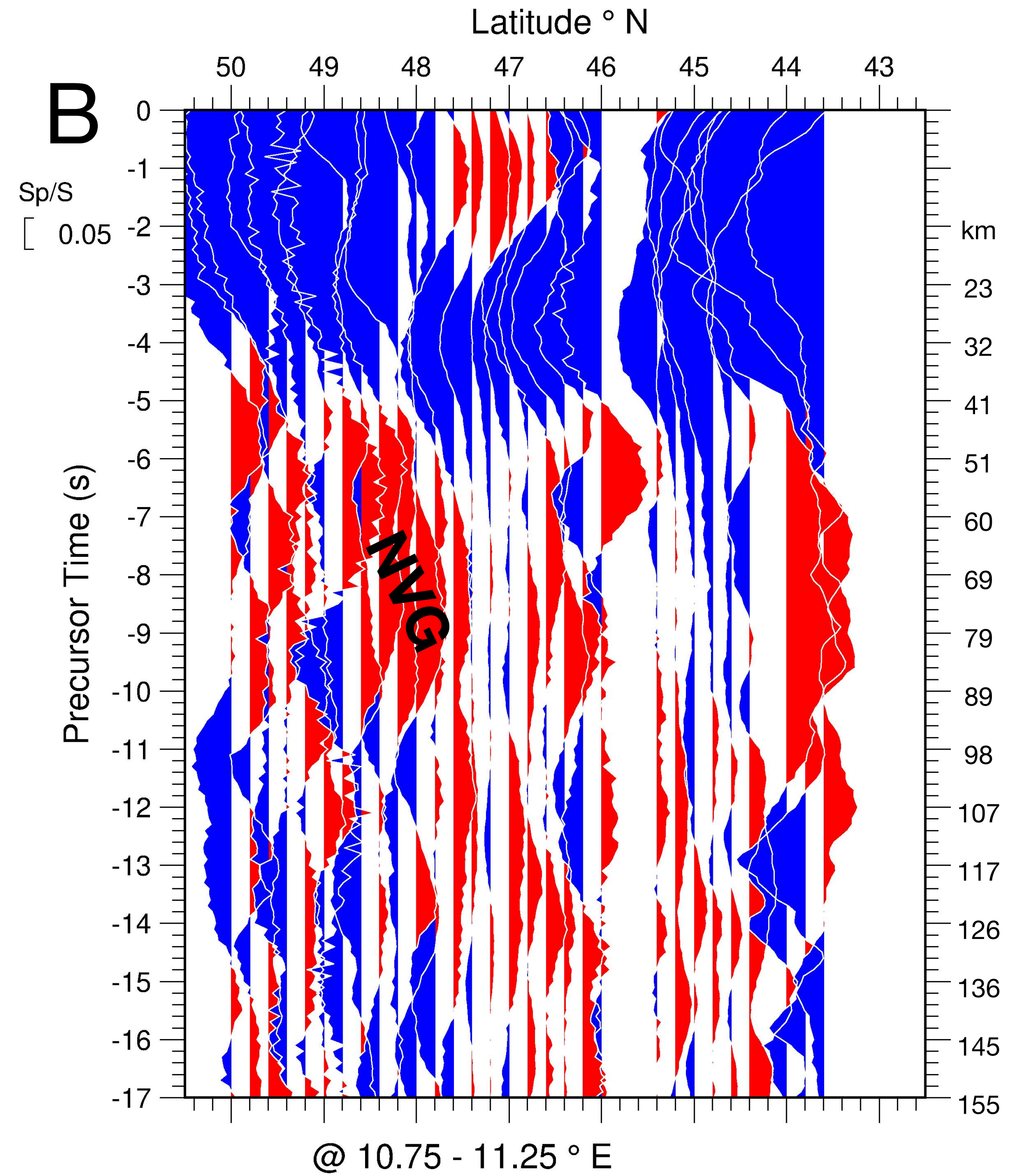
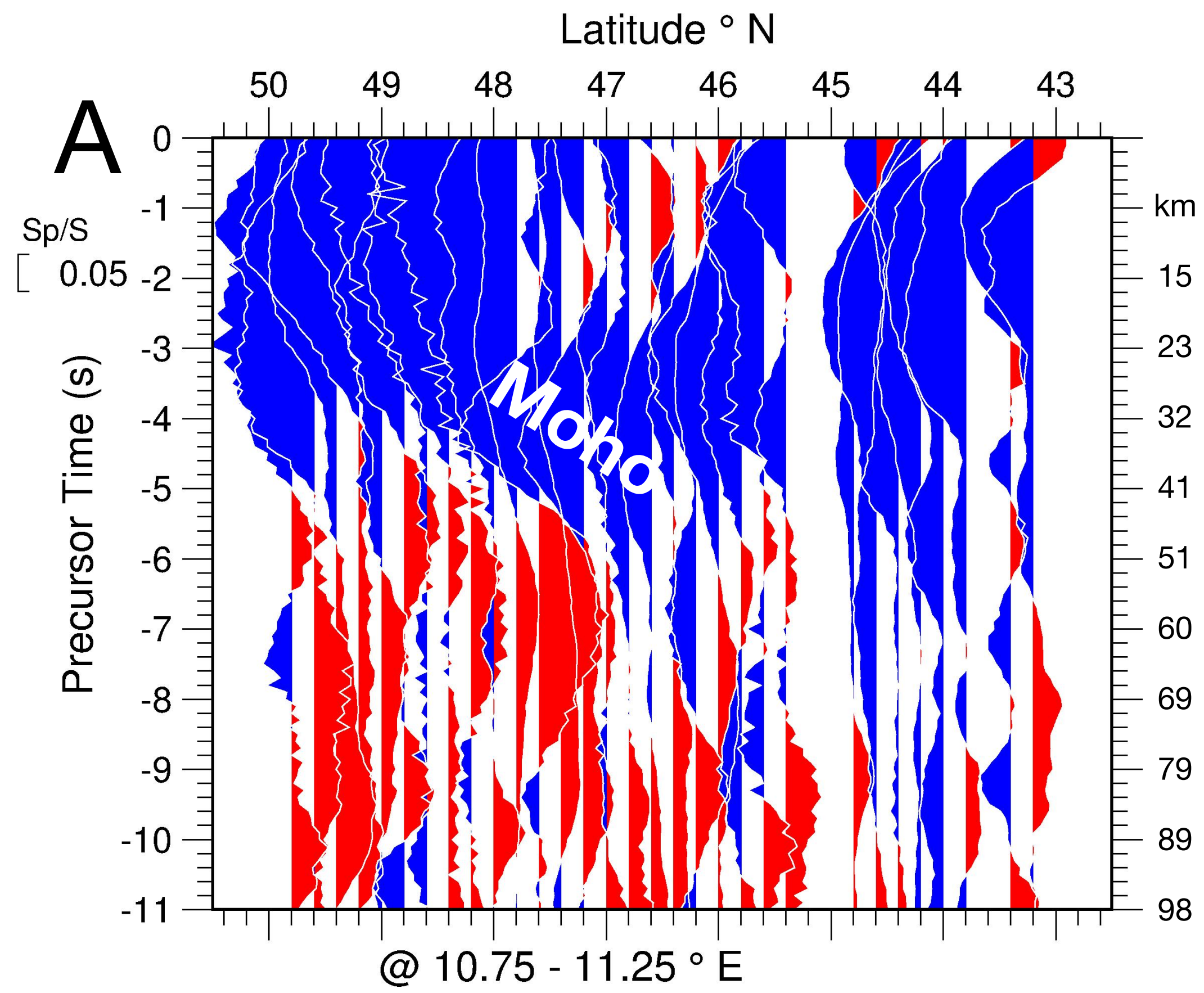


Fig. S1

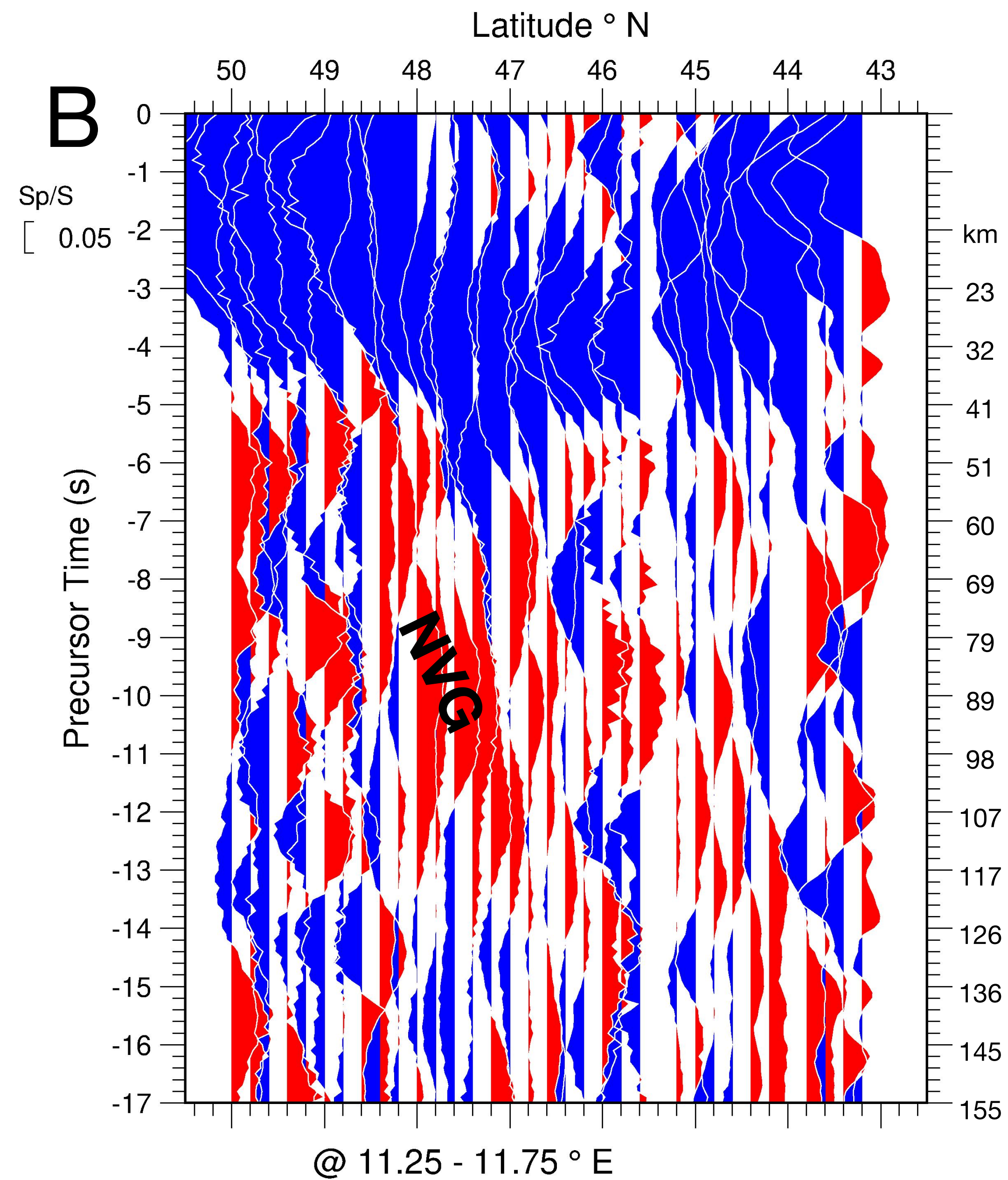
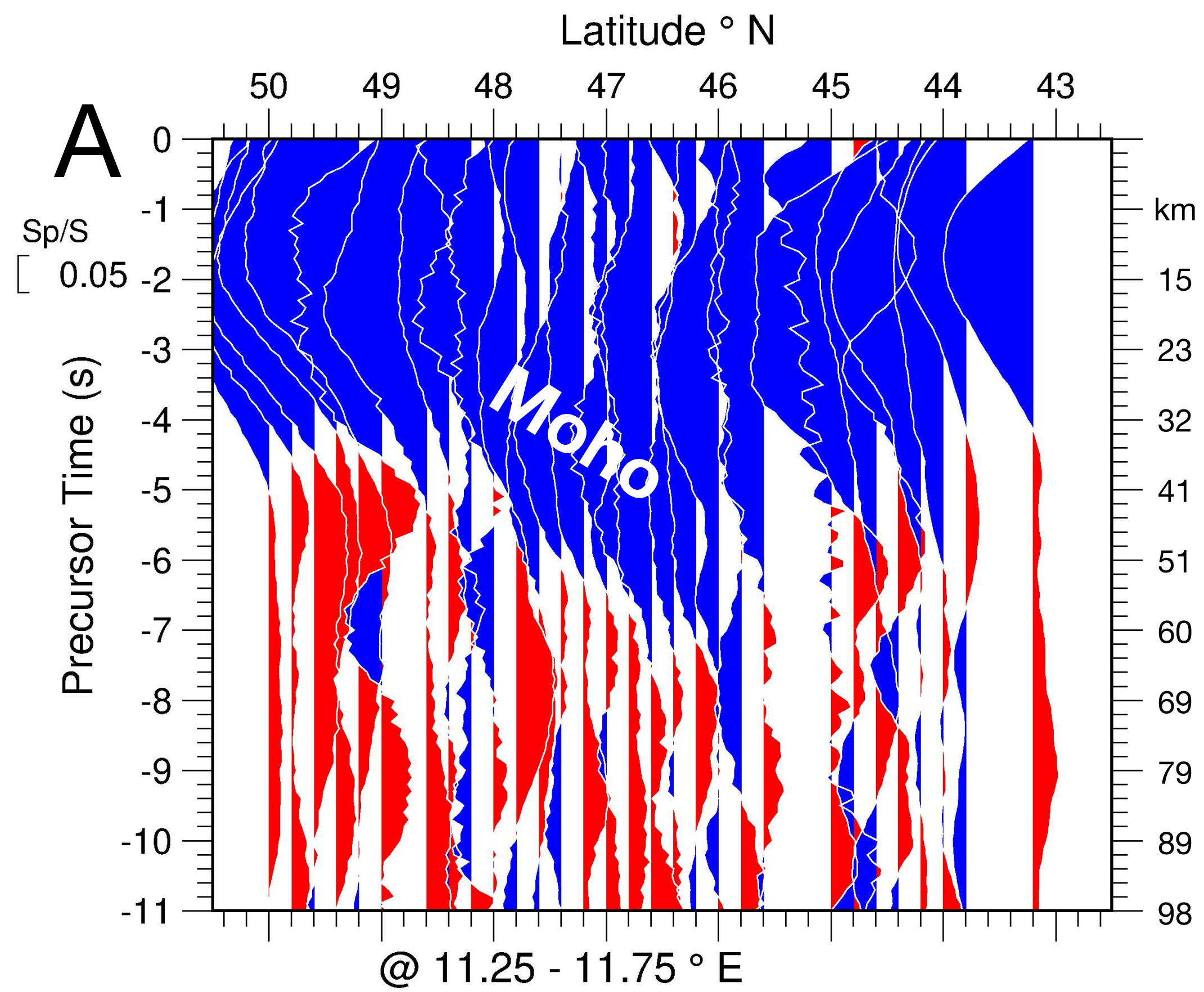


Fig. S2

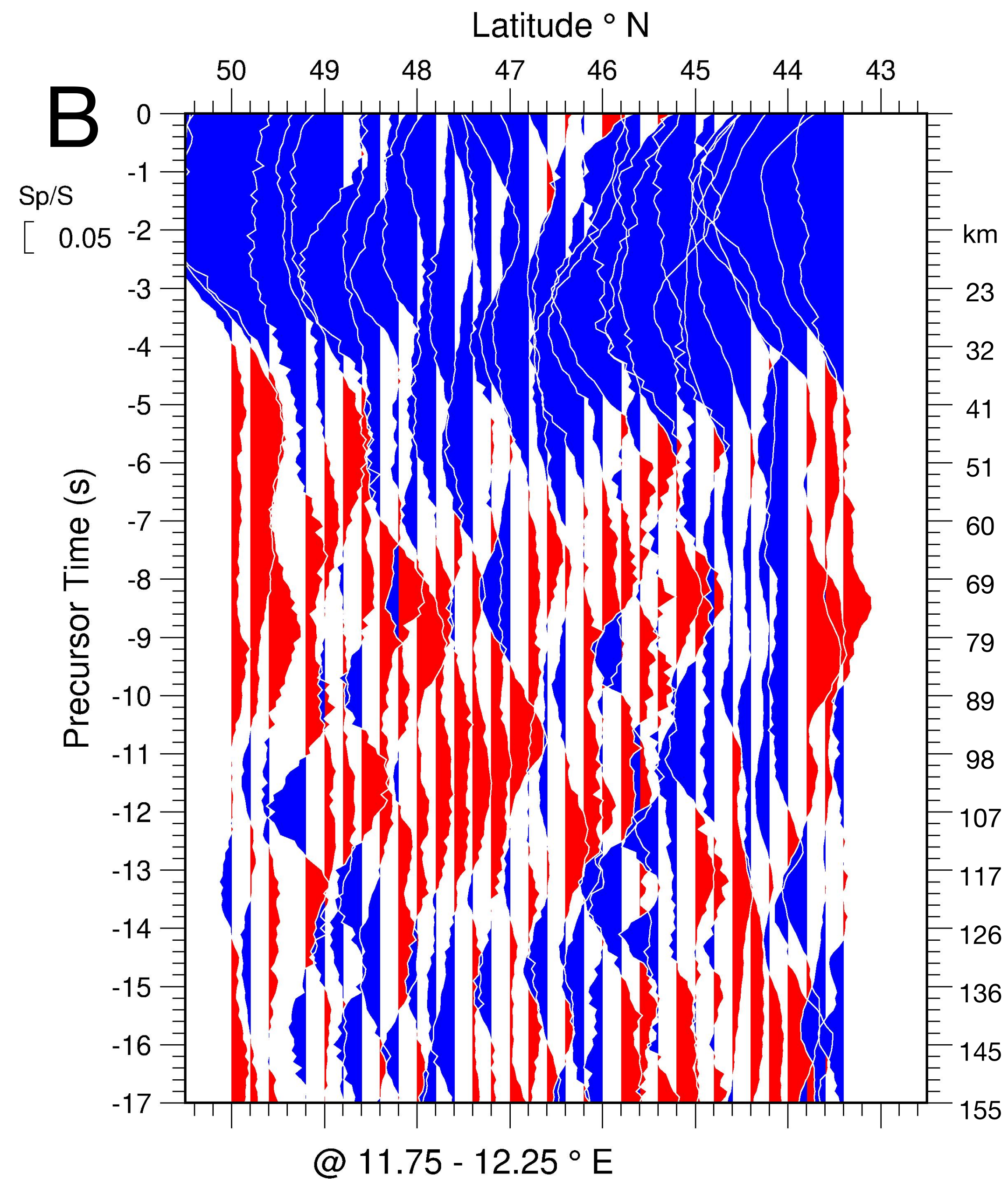
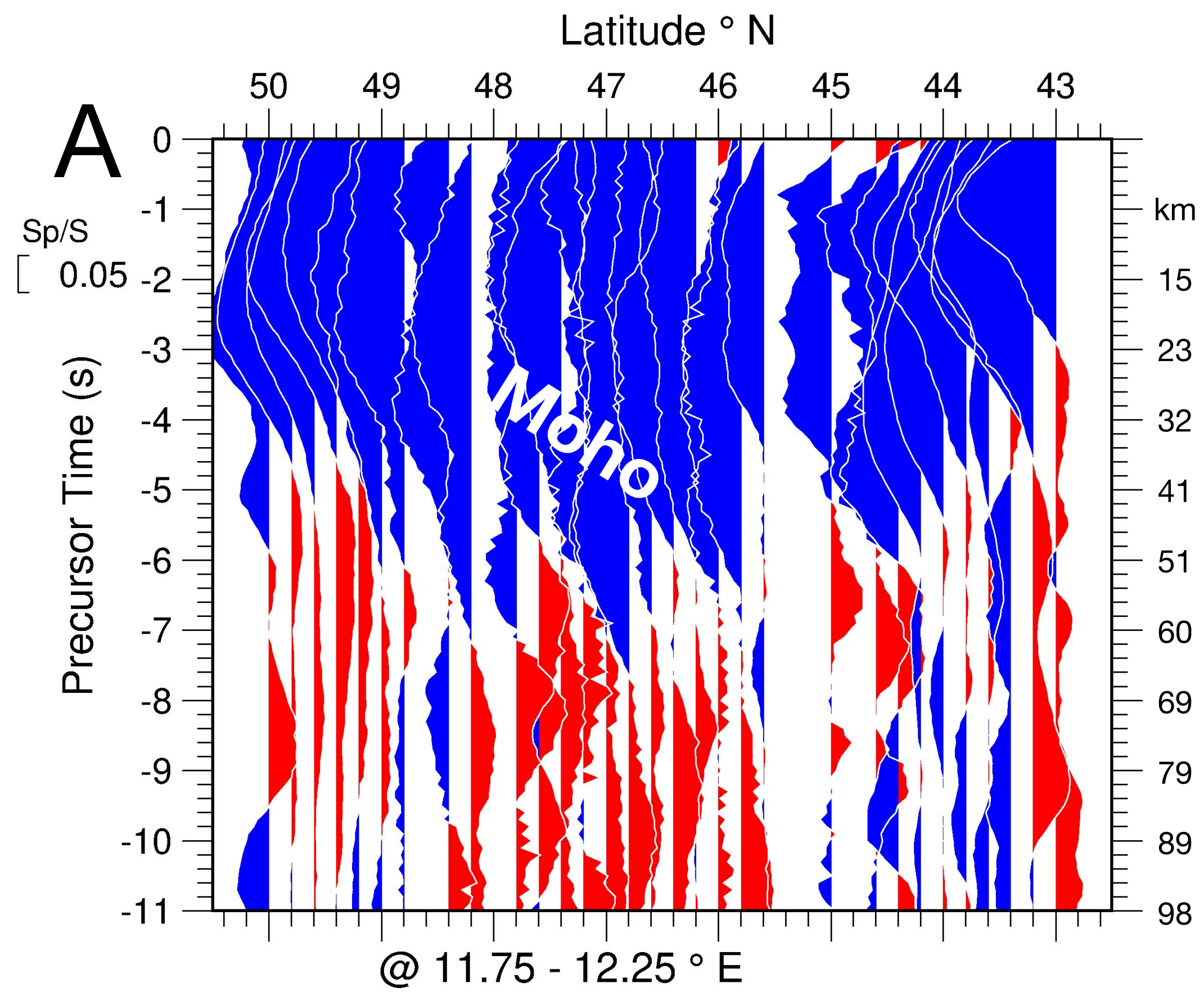


Fig. S3

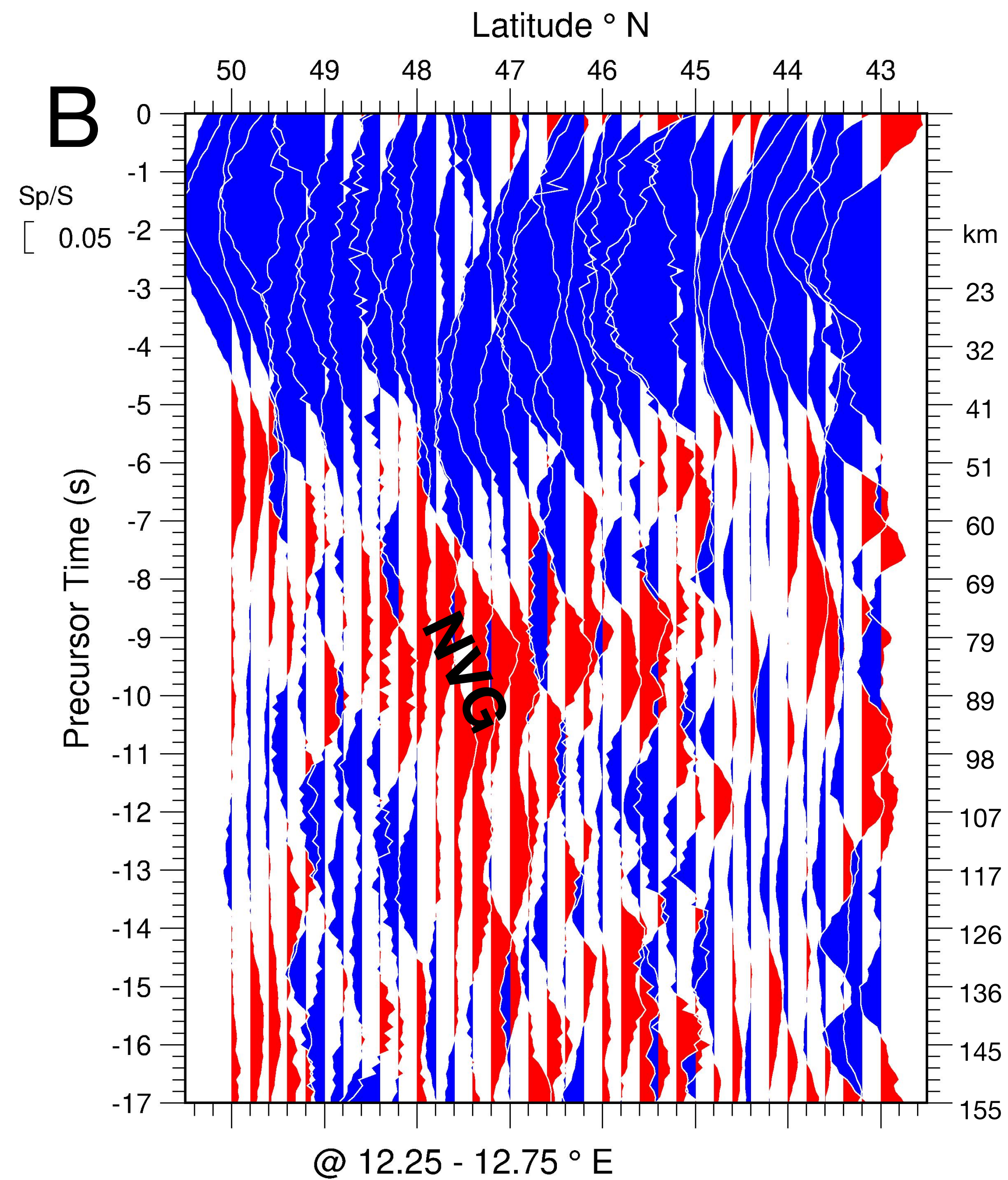
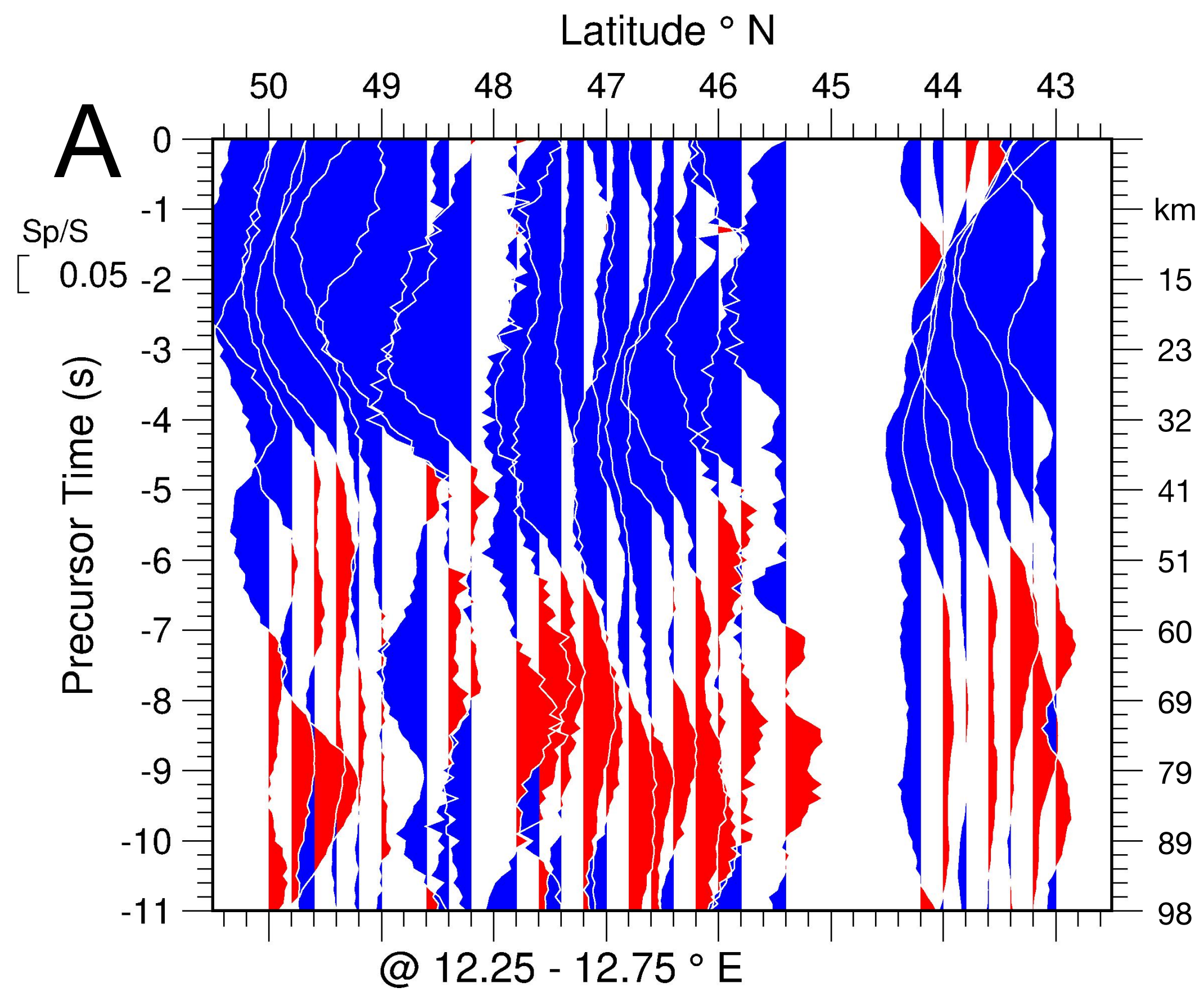


Fig. S4

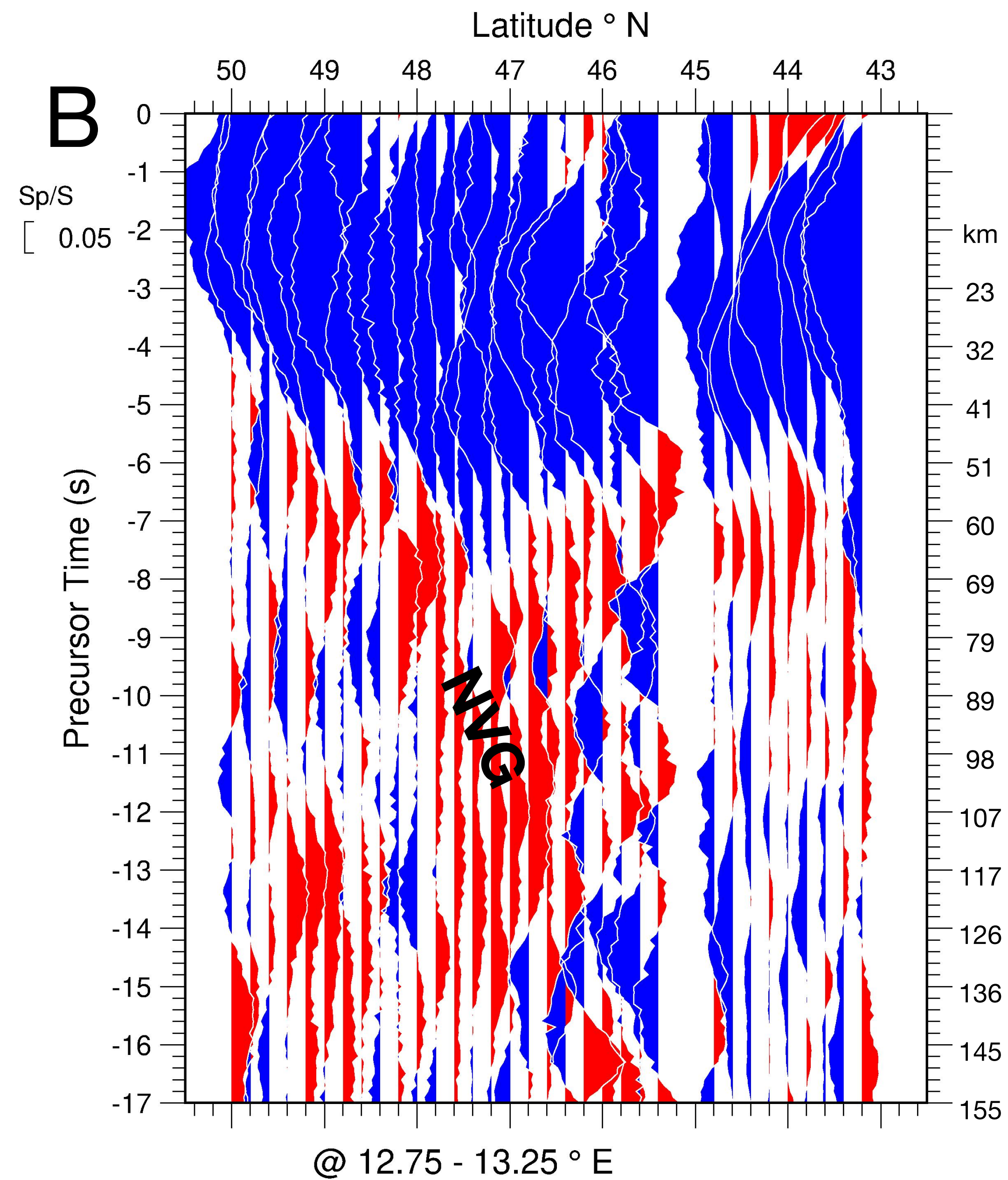
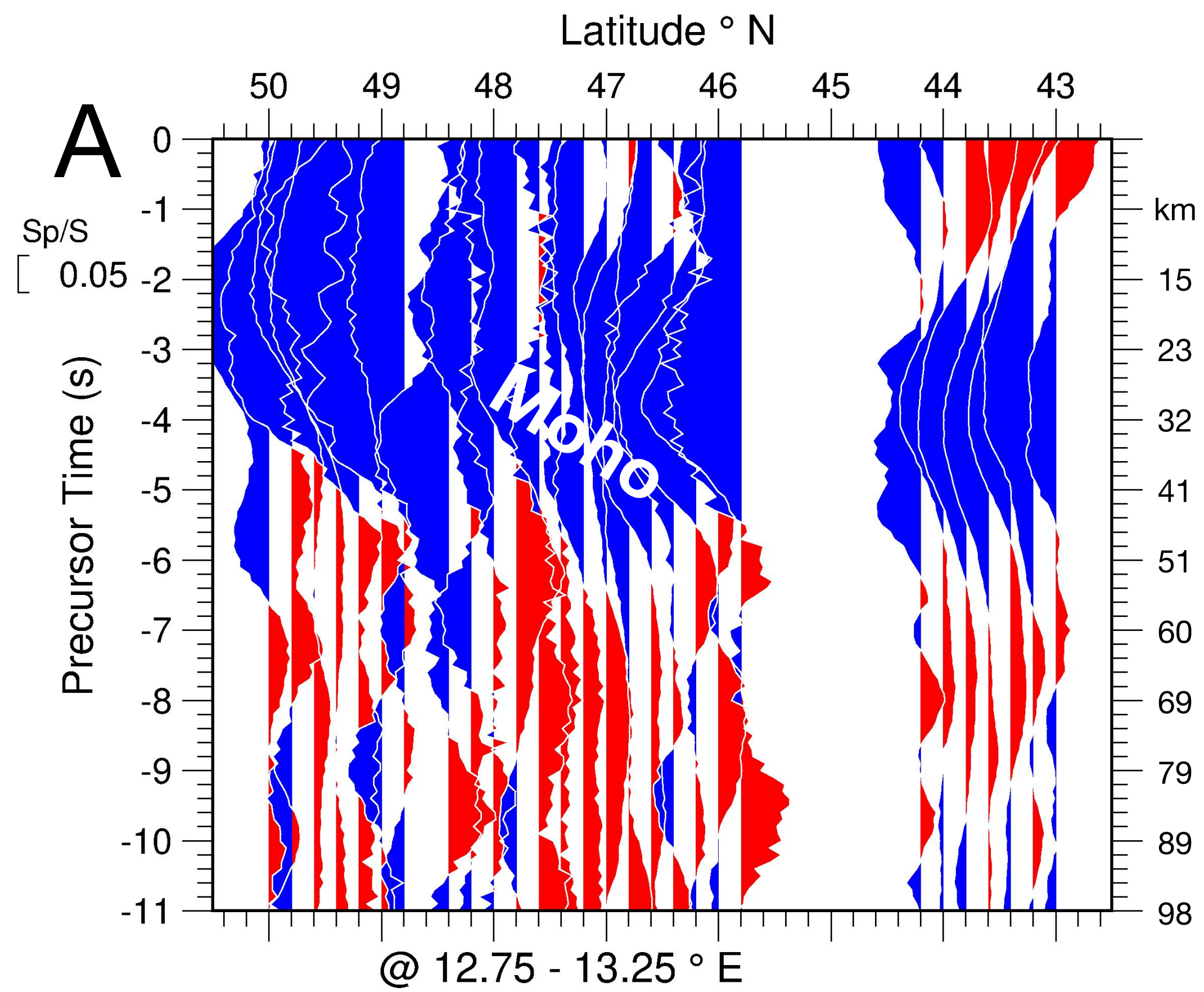


Fig. S5

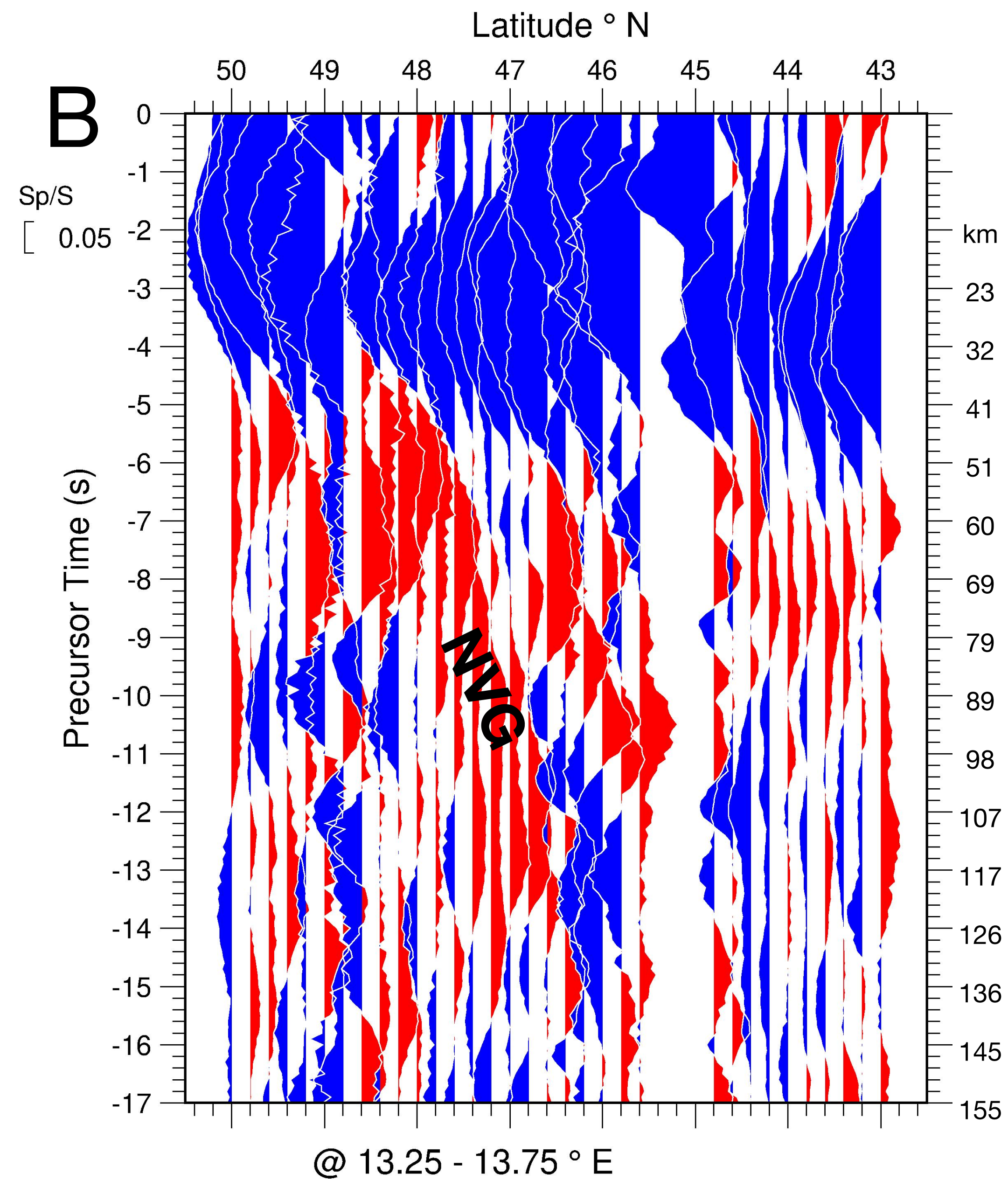
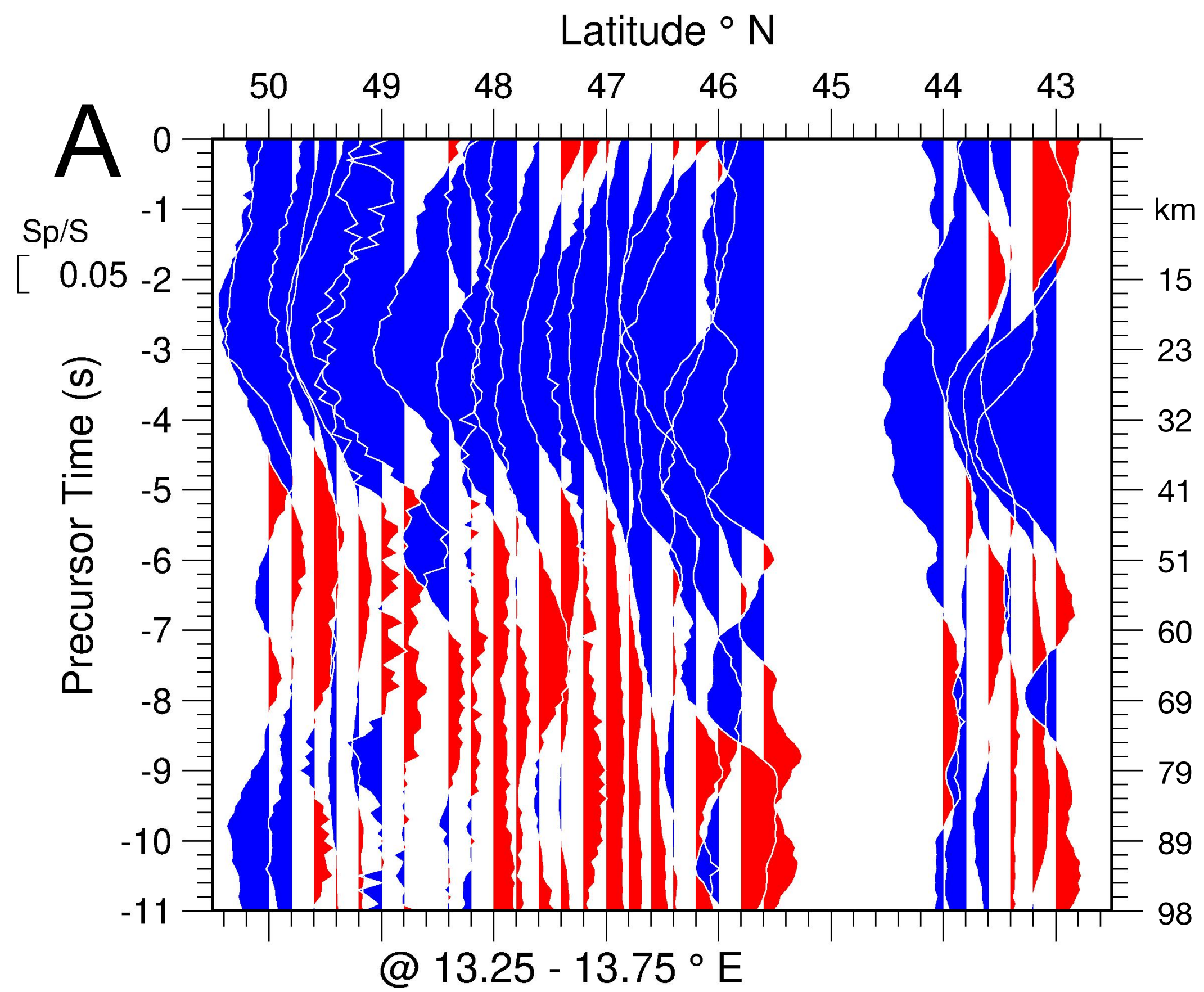


Fig. S6

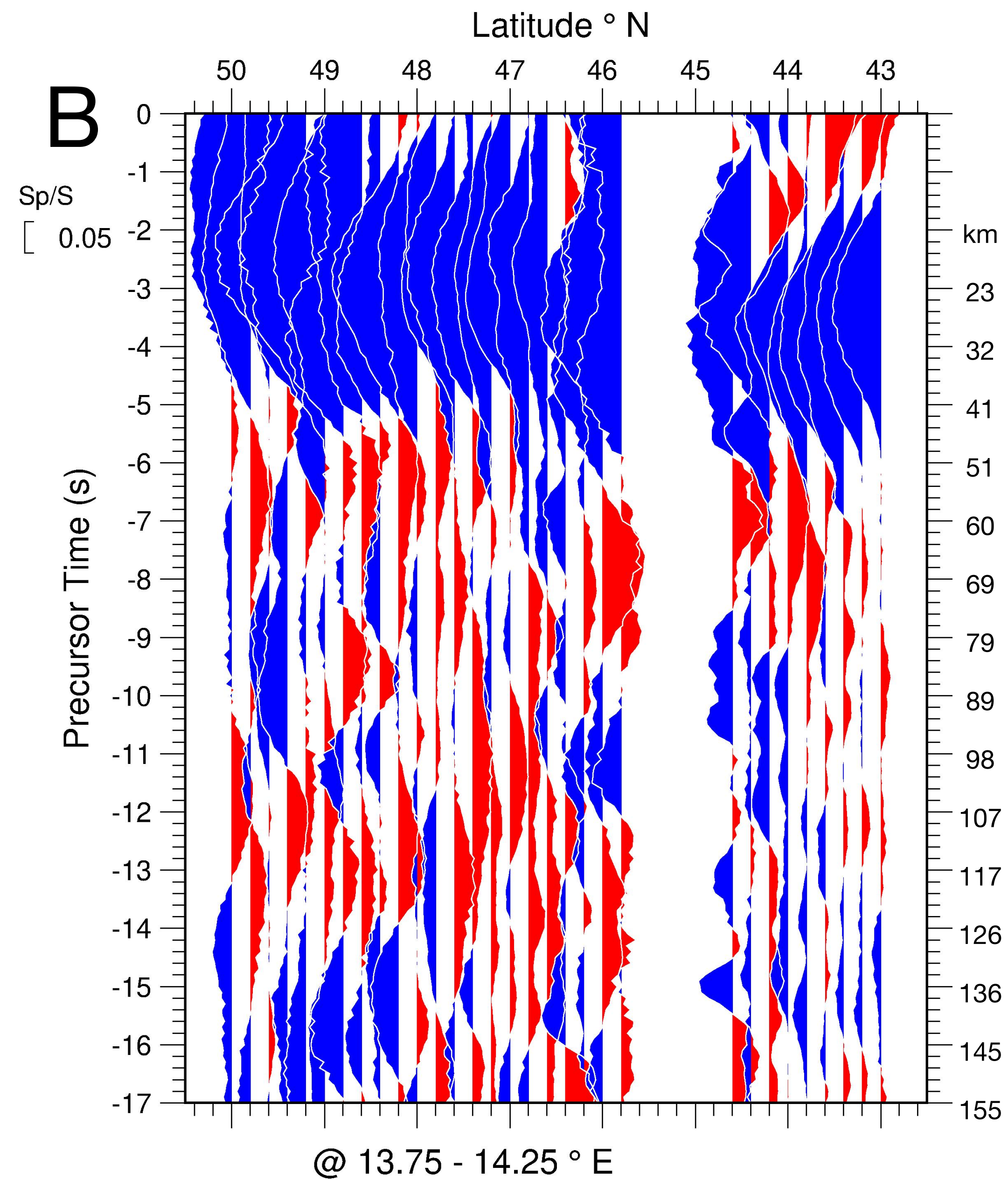
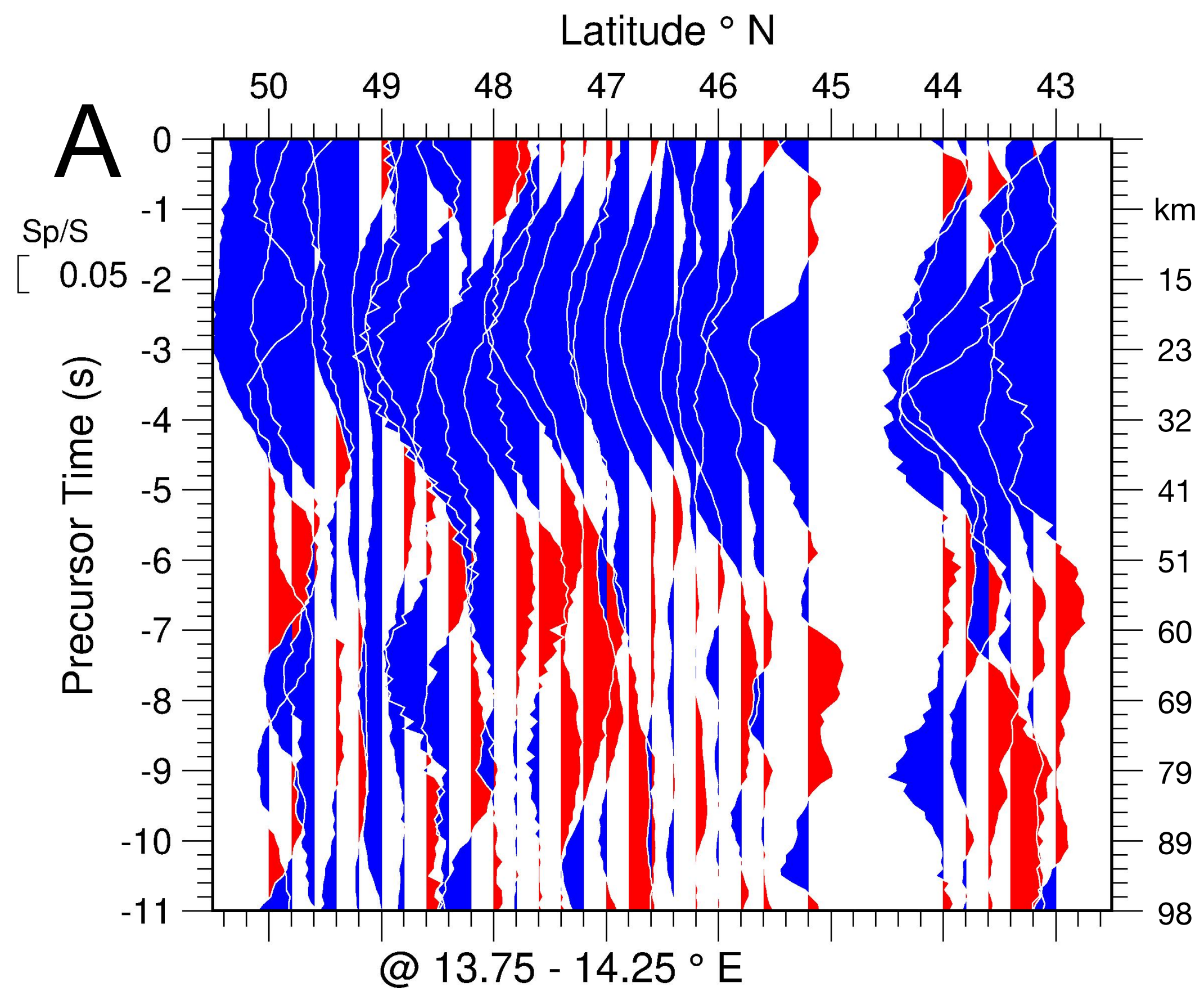


Fig. S7

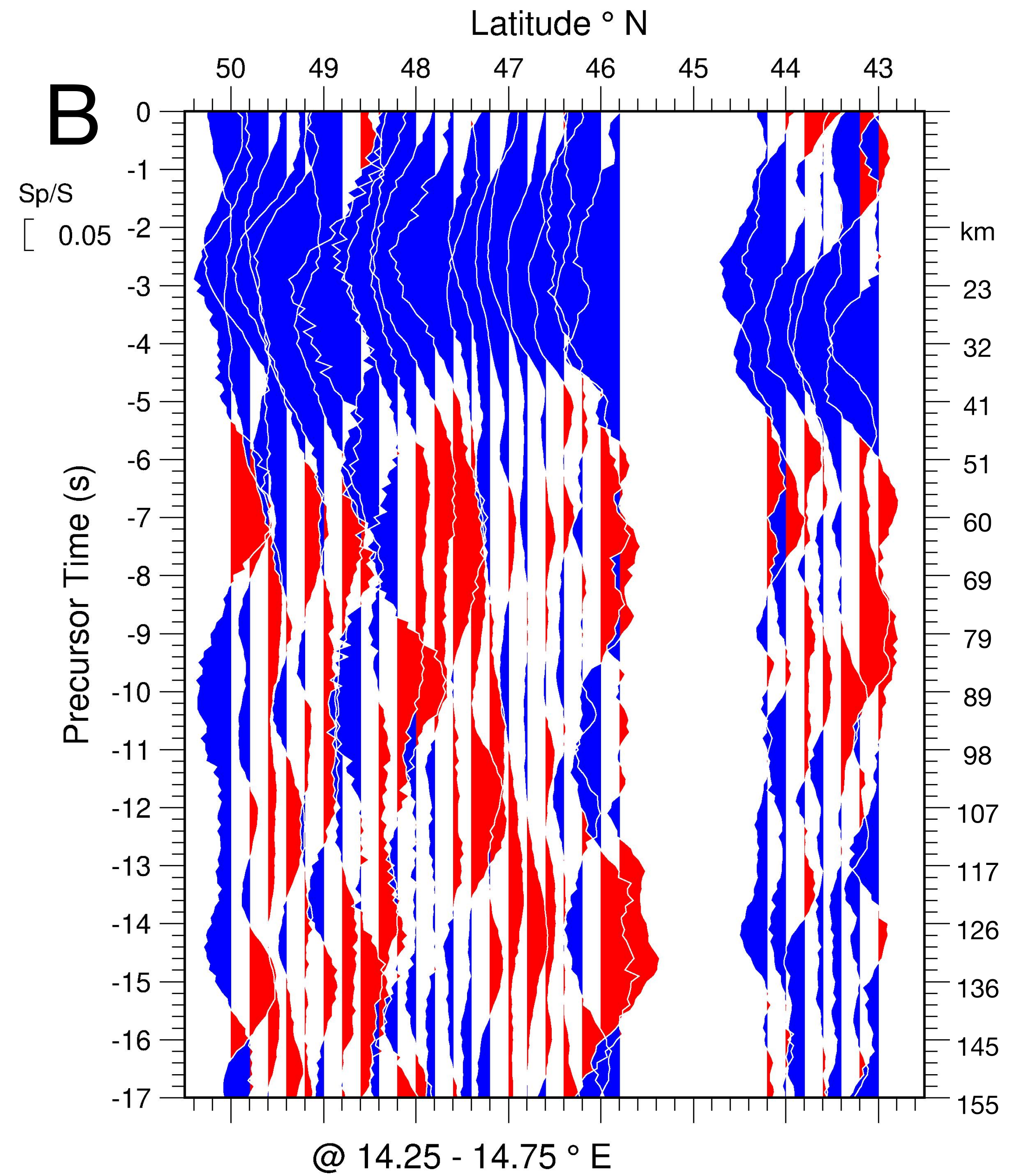
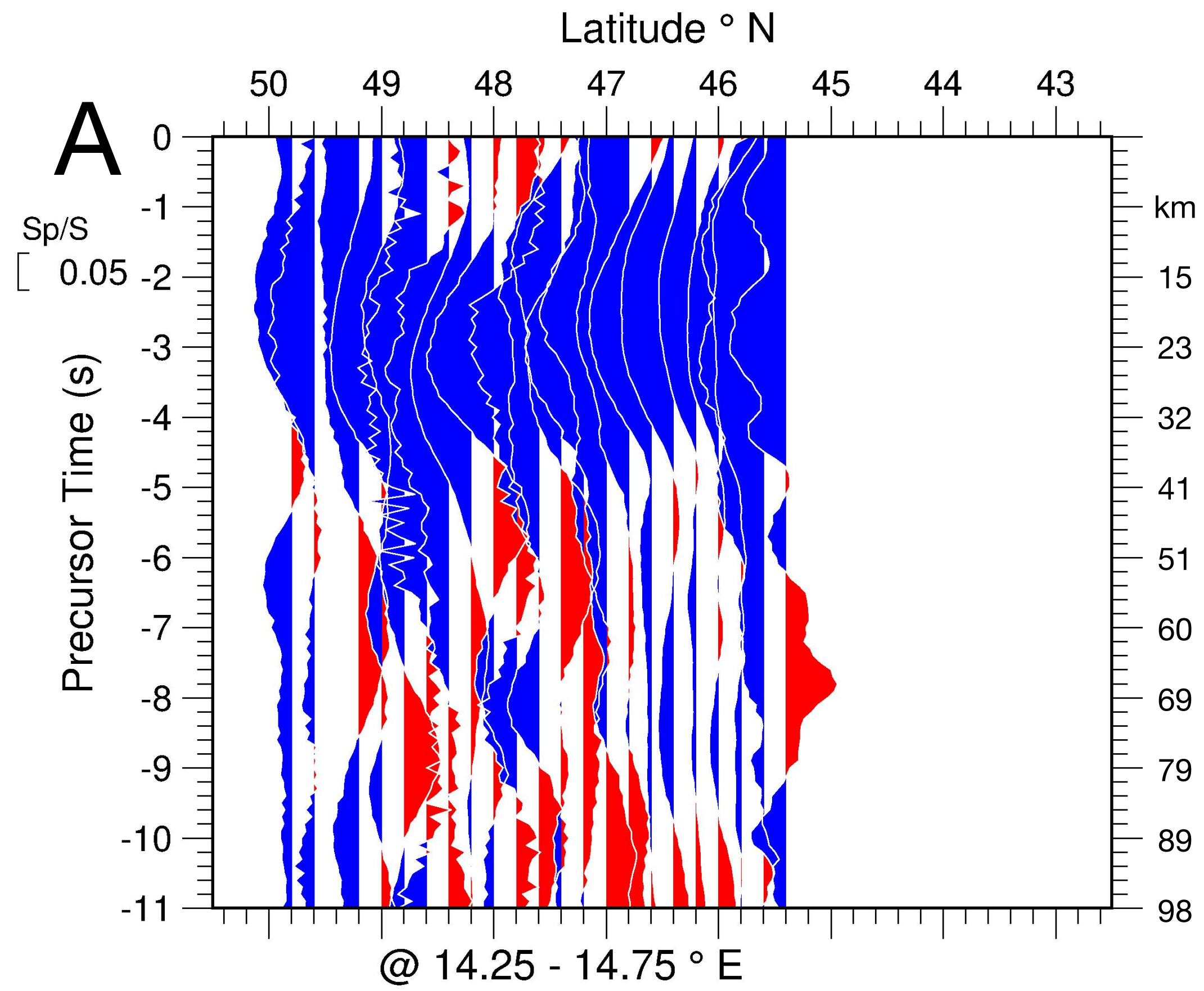


Fig. S8

The following Figs. S9-S11 show north-south profiles across the Mid-Hungarian Zone (MHZ). The stacking boxes are also $0.5^\circ \times 0.5^\circ$ in latitude and longitude. The black dotted lines mark approximately the onsets of the converted signal from the Moho. The red dotted lines mark approximately the maxima of the Moho signals. We see that in Fig.S9A both lines are nearly parallel, as it could be expected in case of a single discontinuity. In Fig. S9B these lines are not parallel north of 48°N , which could probably be explained by precursors caused by an additional discontinuity below the actual Moho. Similar precursors are visible also in Fig. 11A.

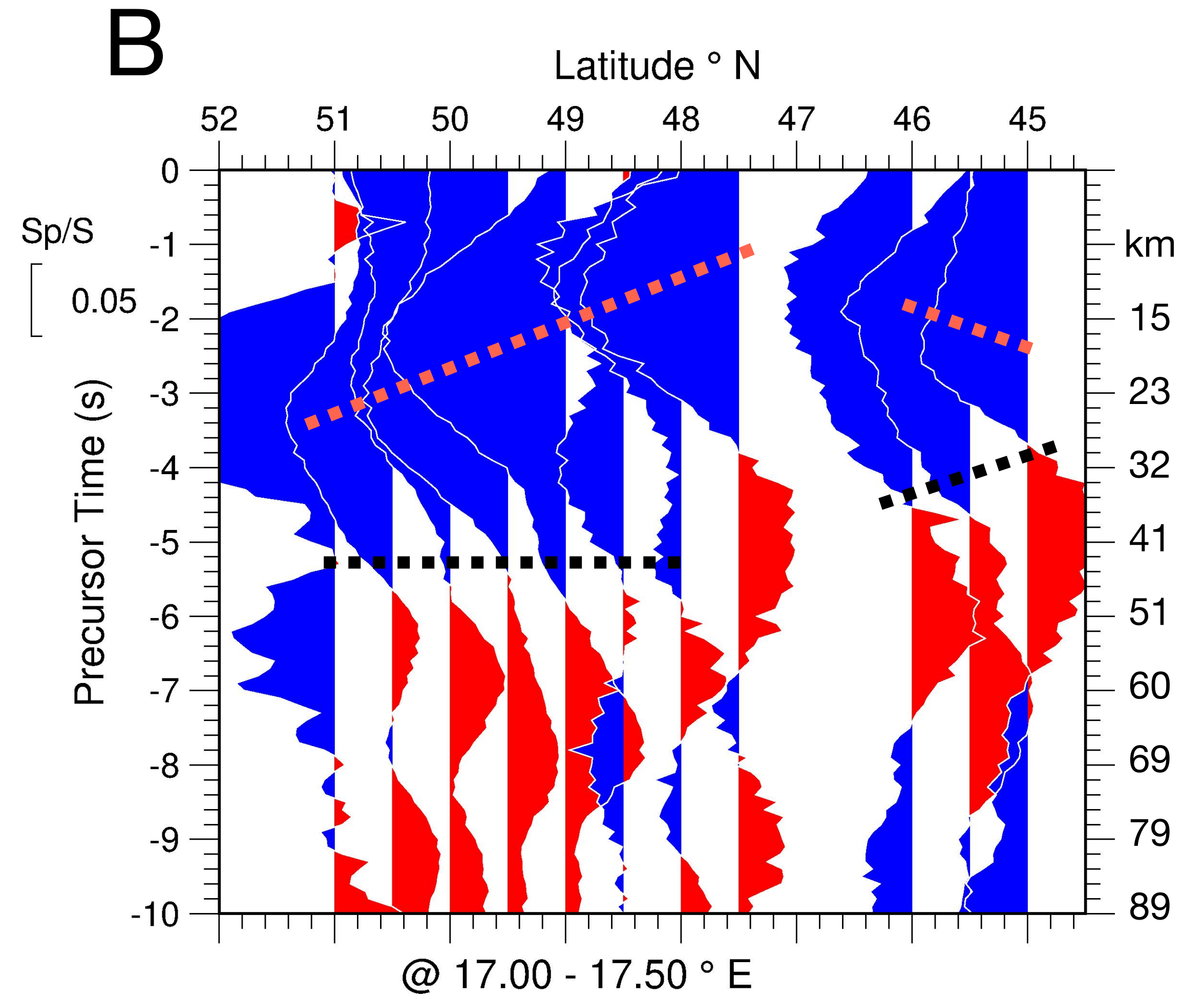
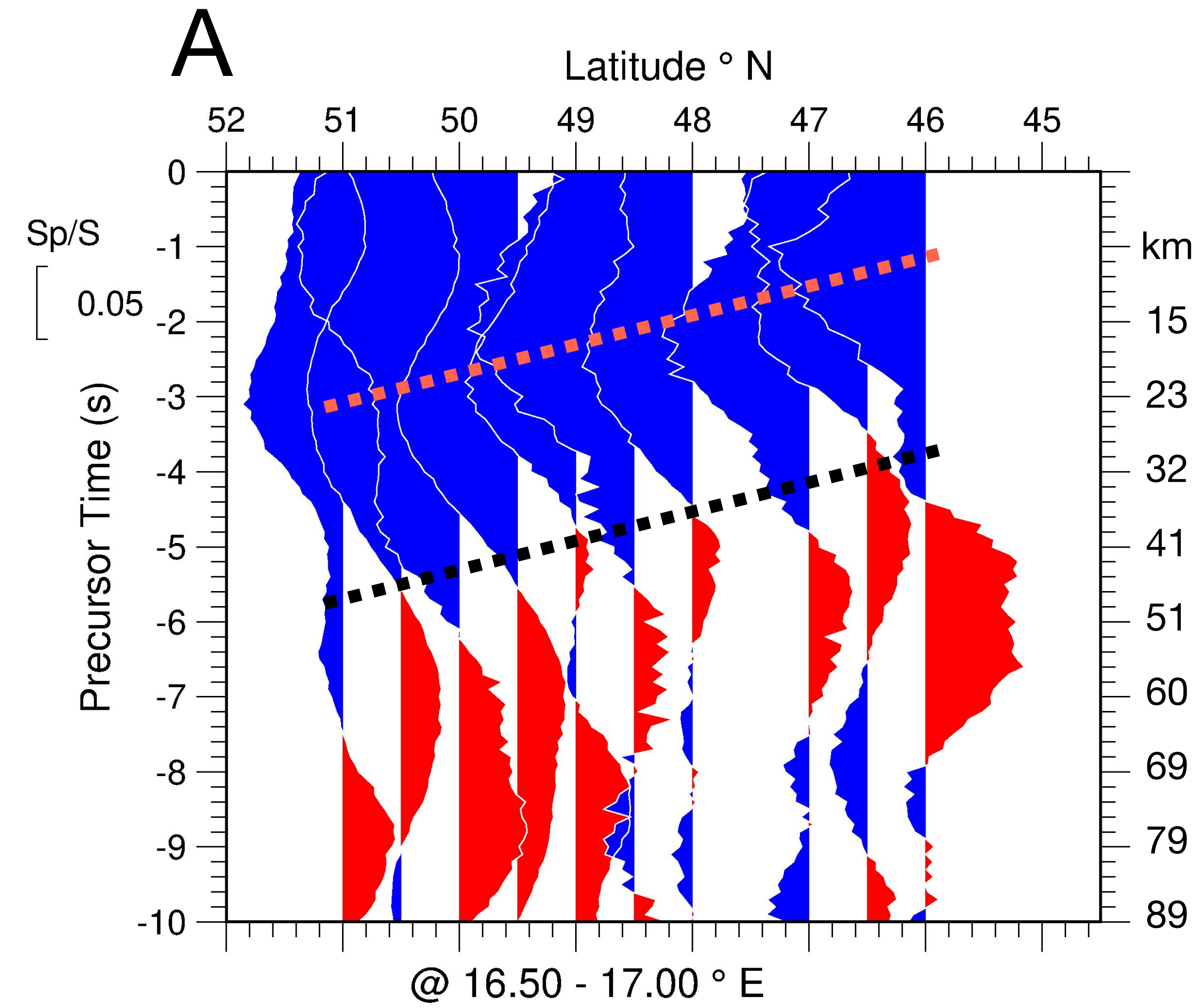


Fig. S9

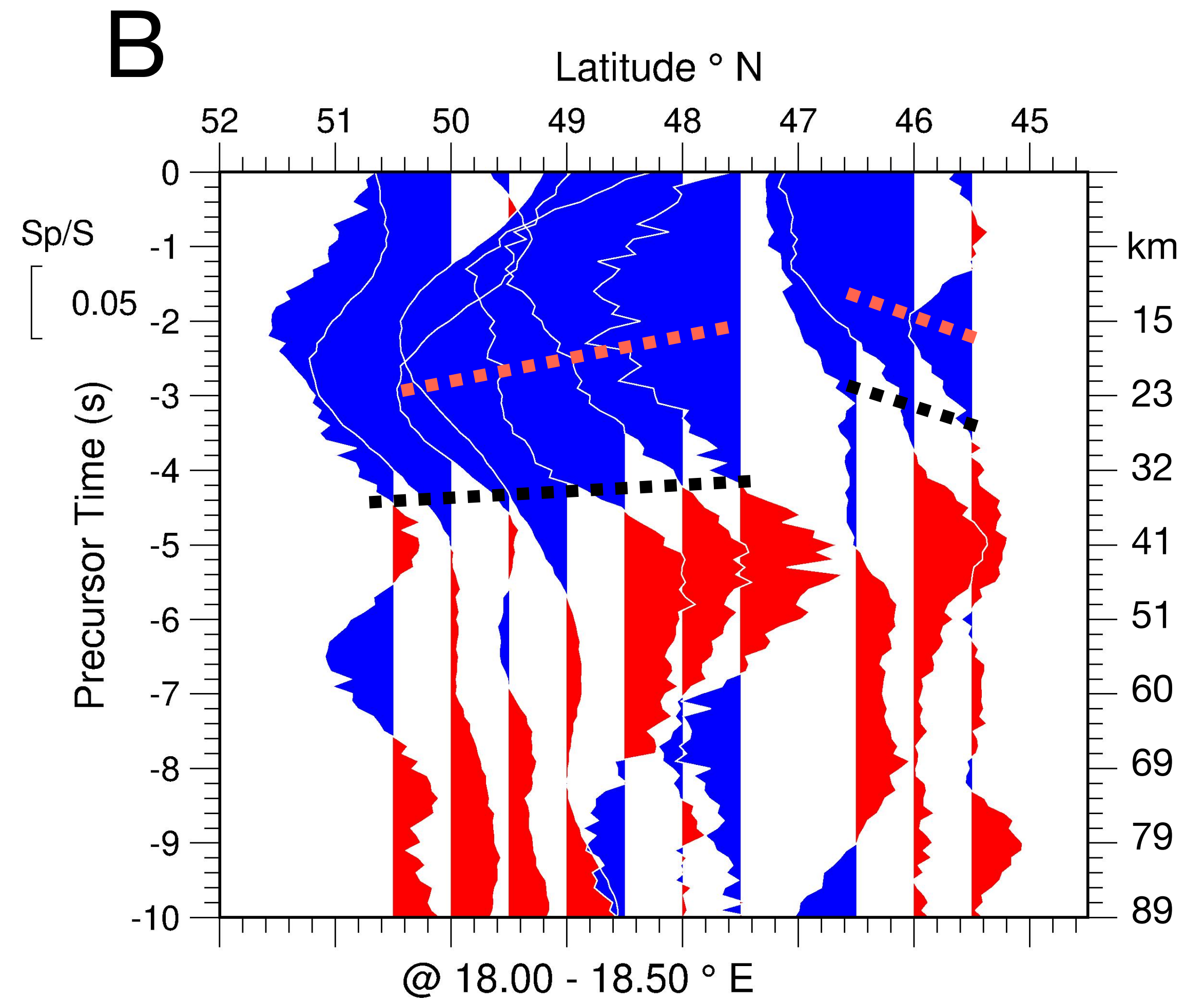
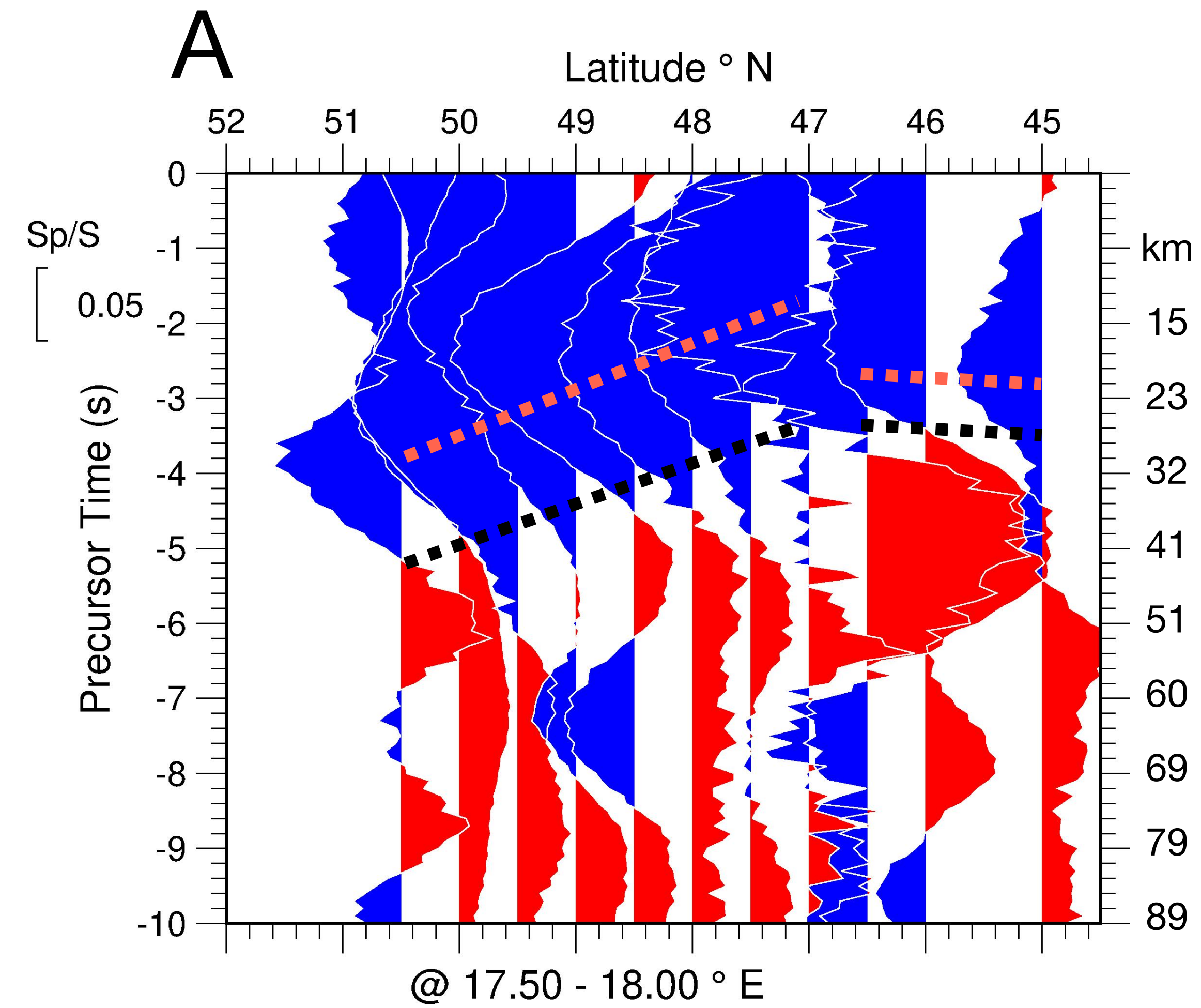


Fig. S10

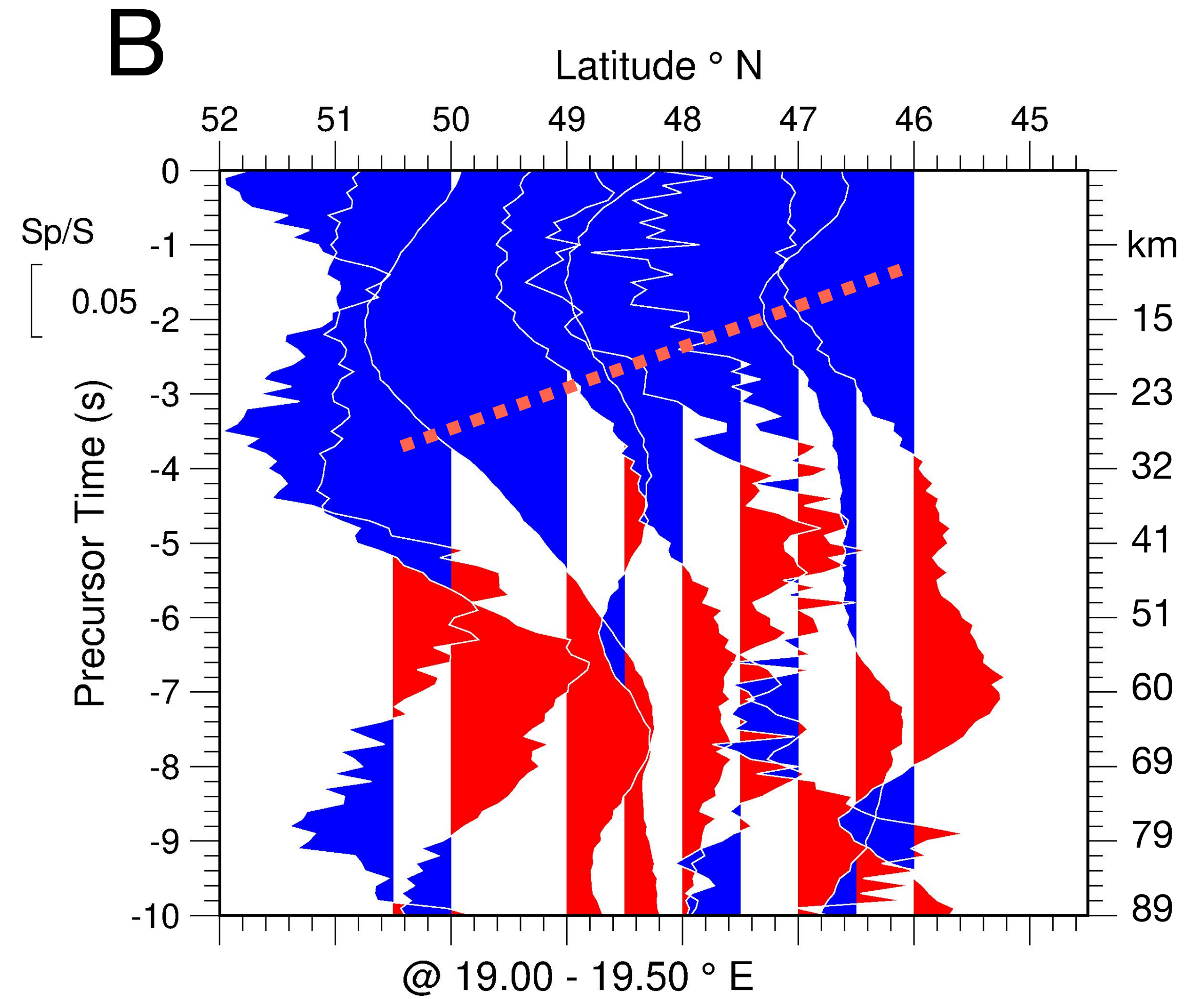
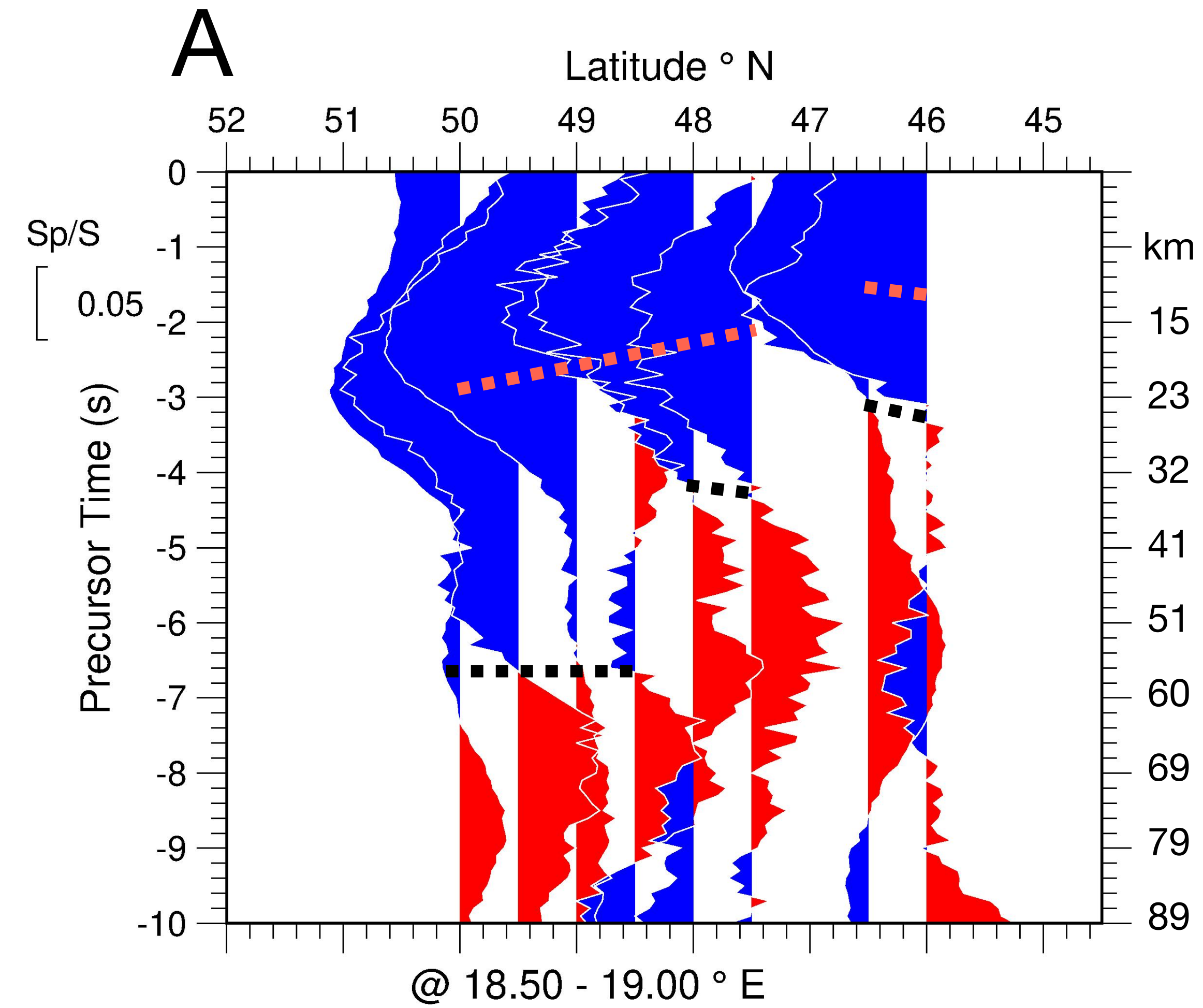


Fig. S11

East-West Profiles

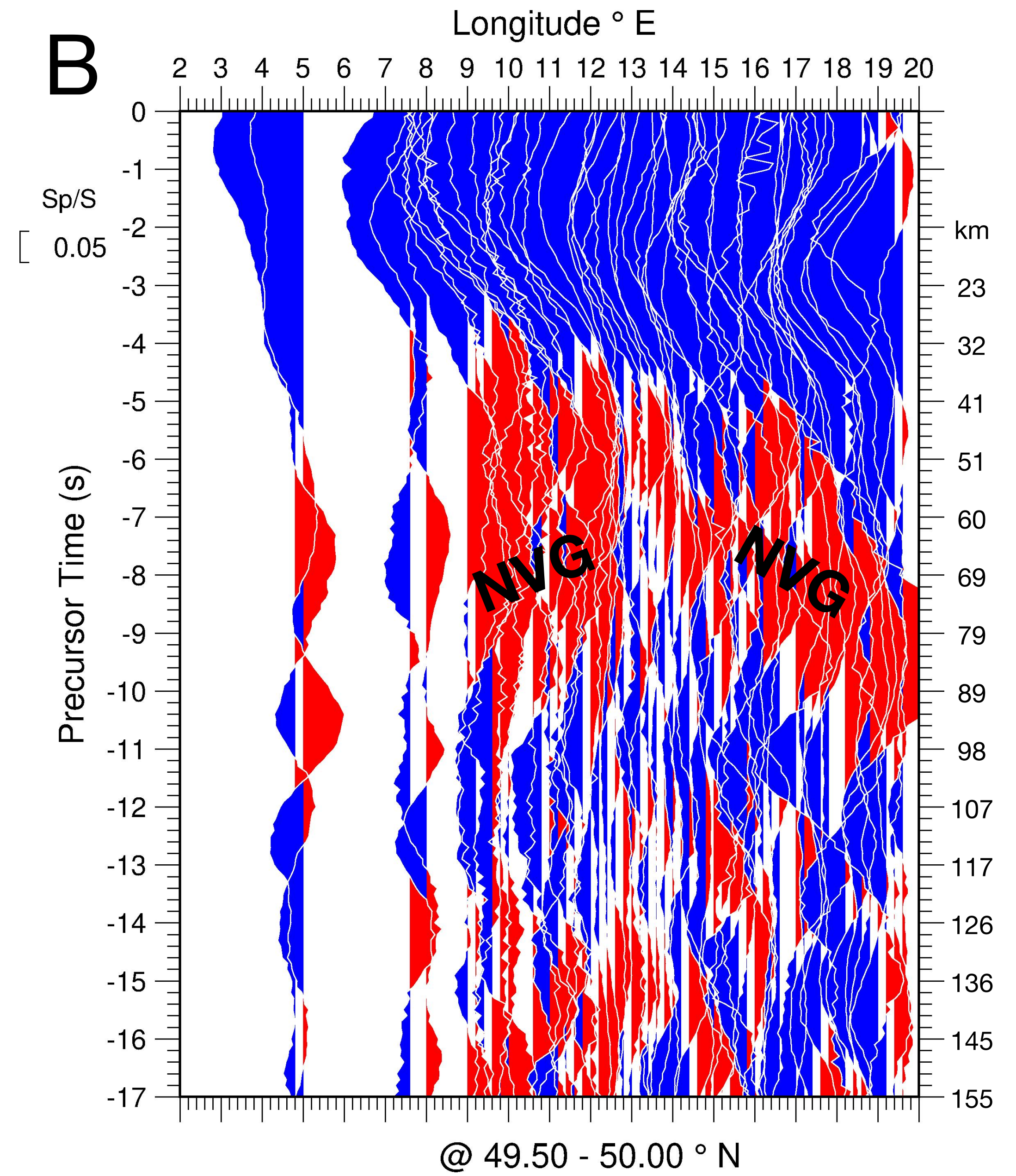
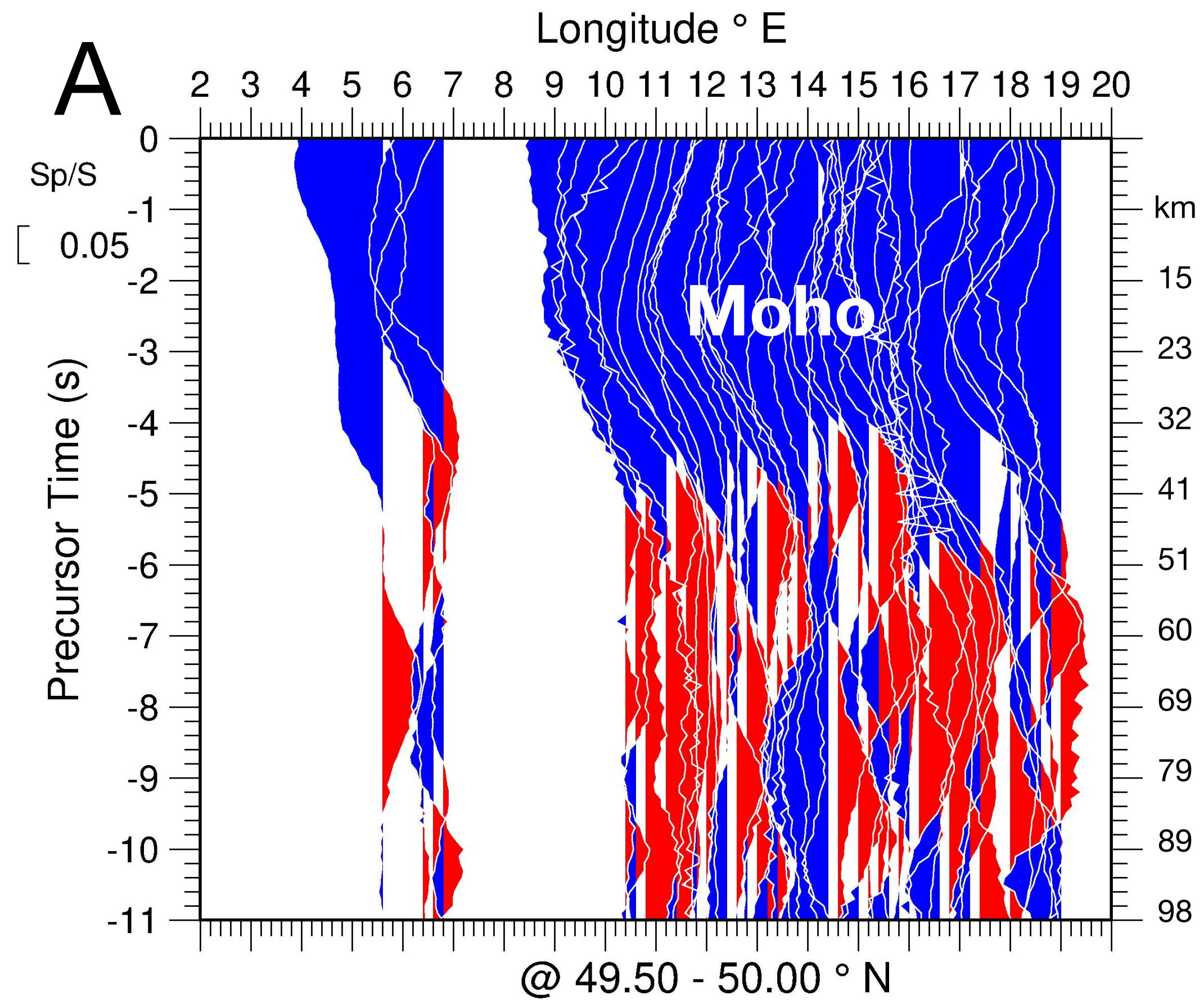


Fig. S12

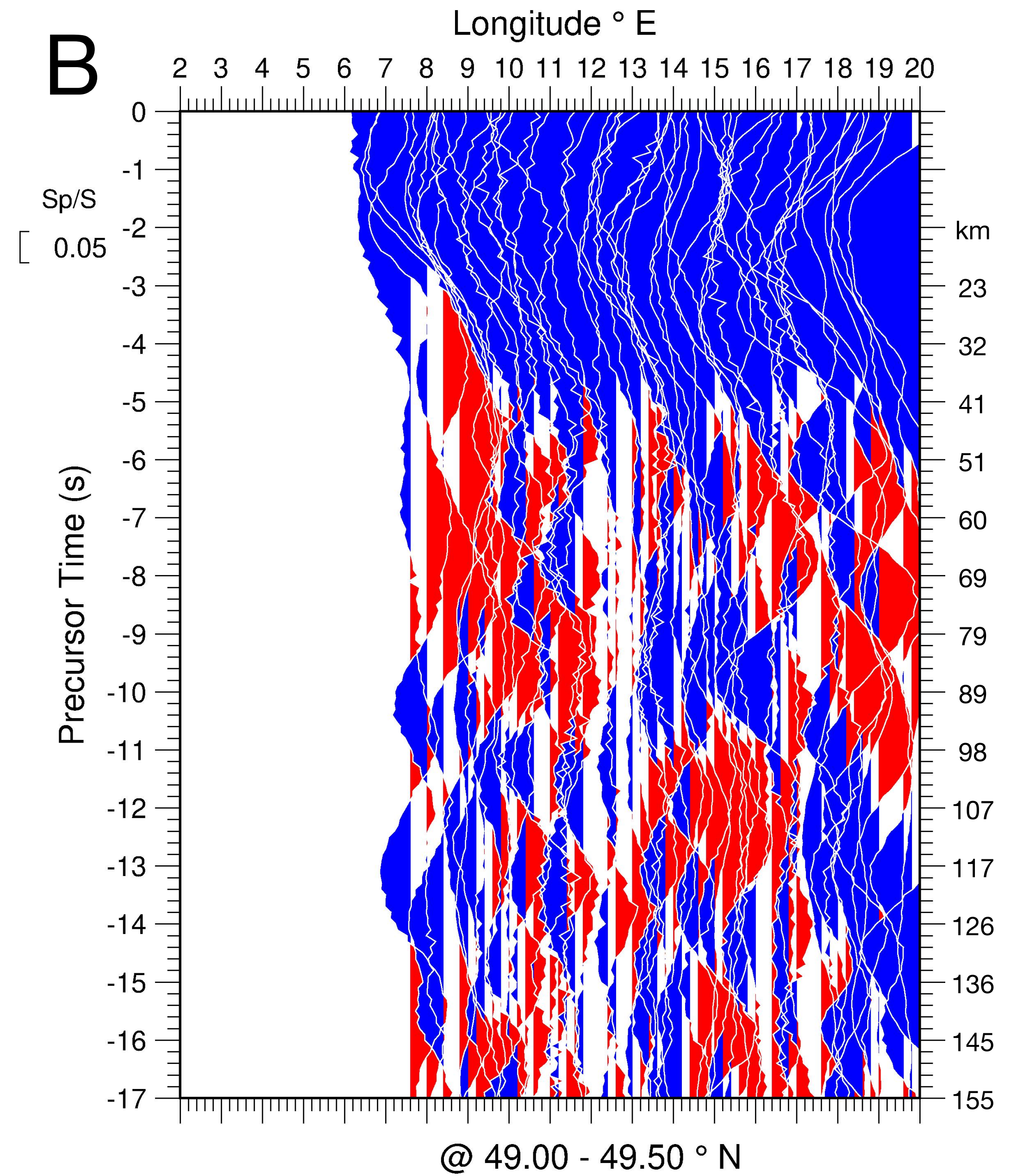
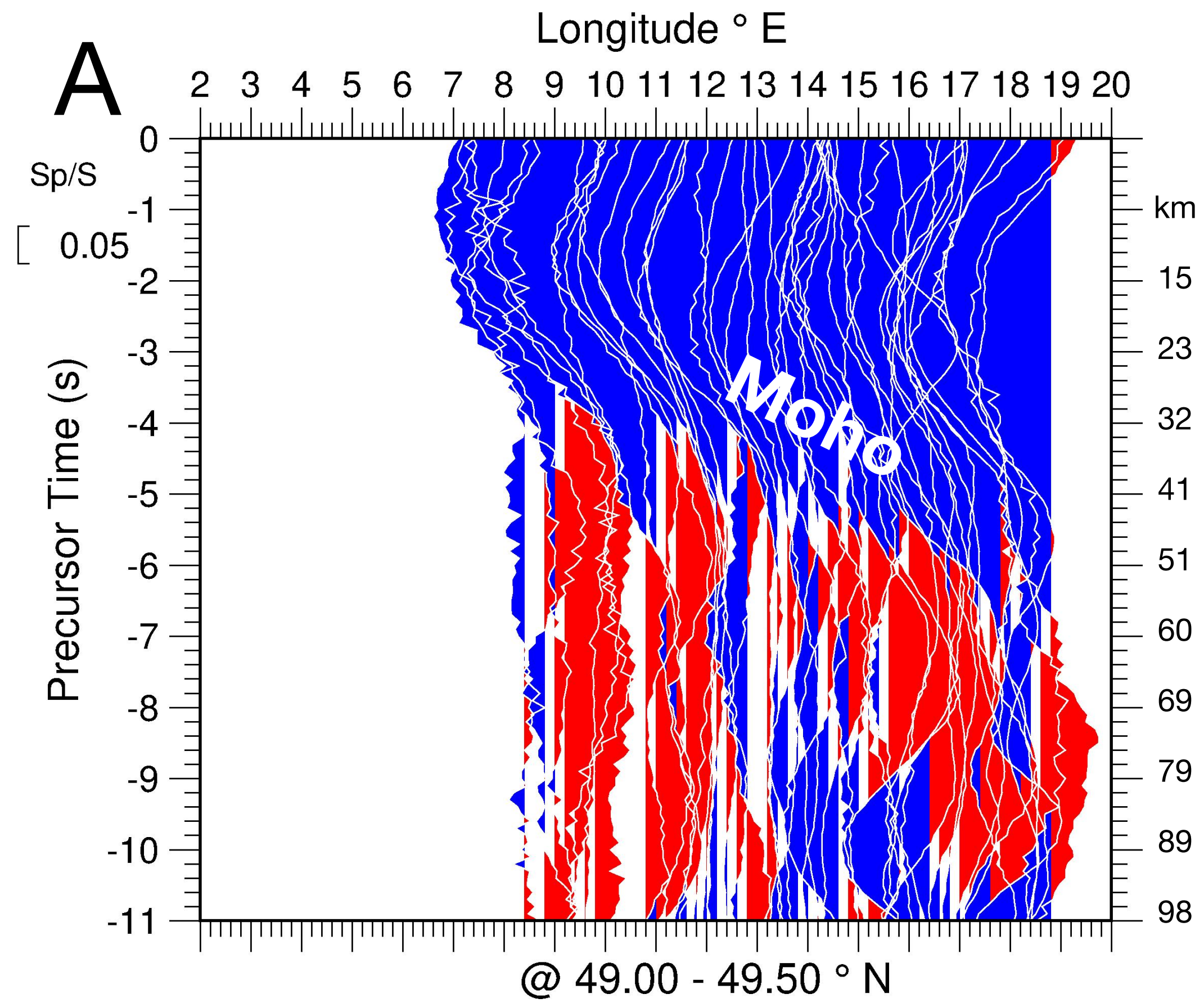


Fig. S13

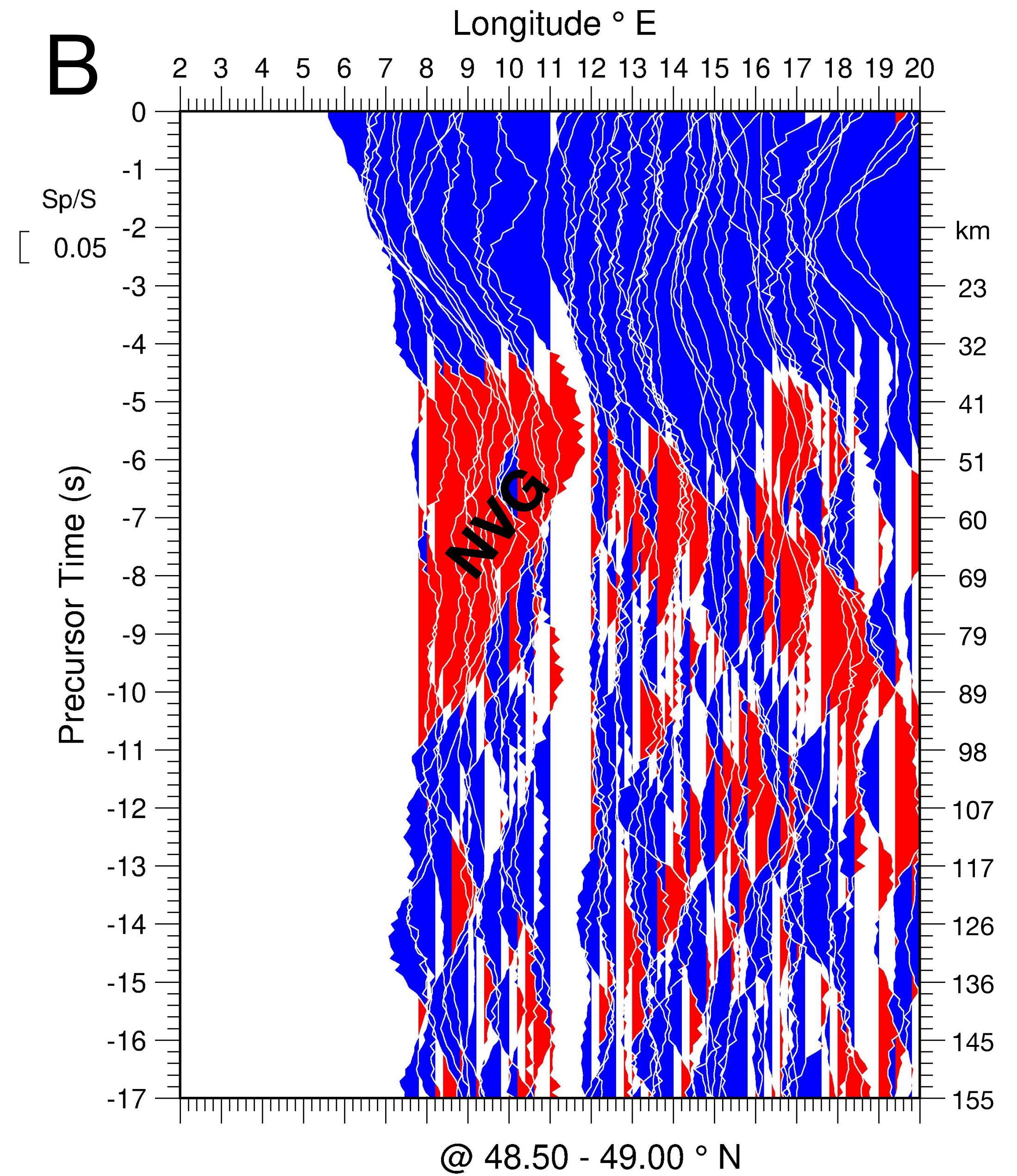
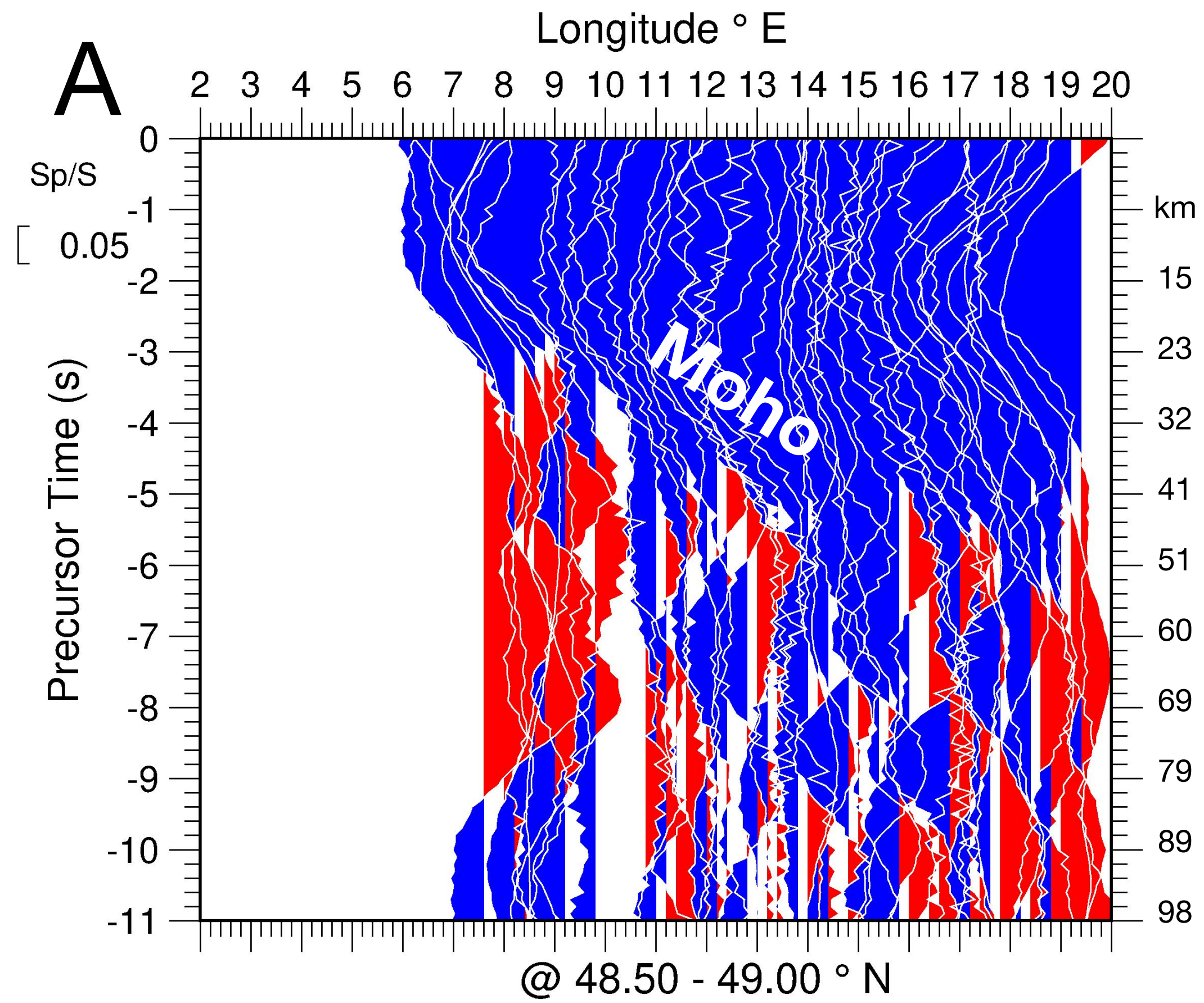


Fig. S14

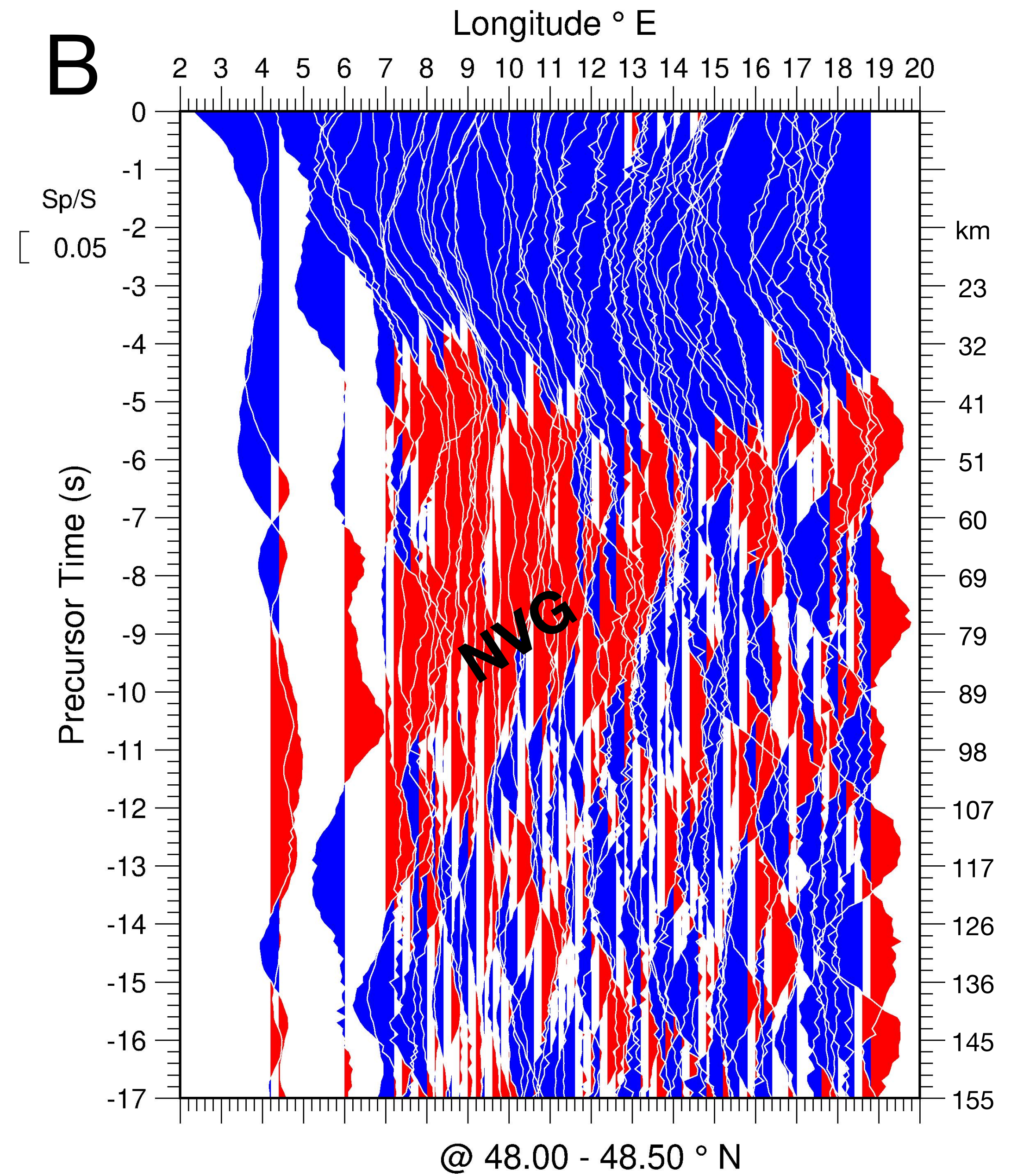
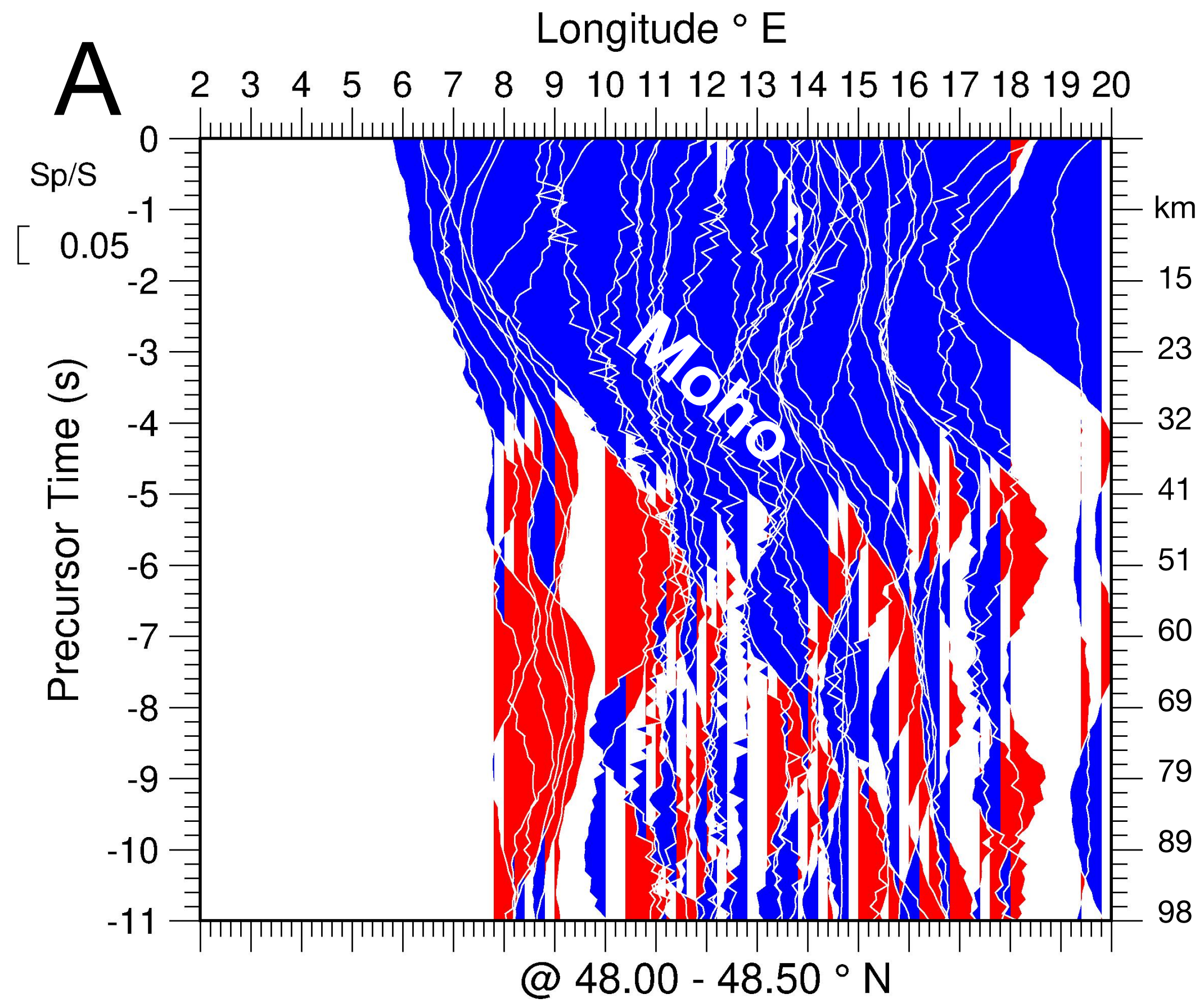


Fig. S15

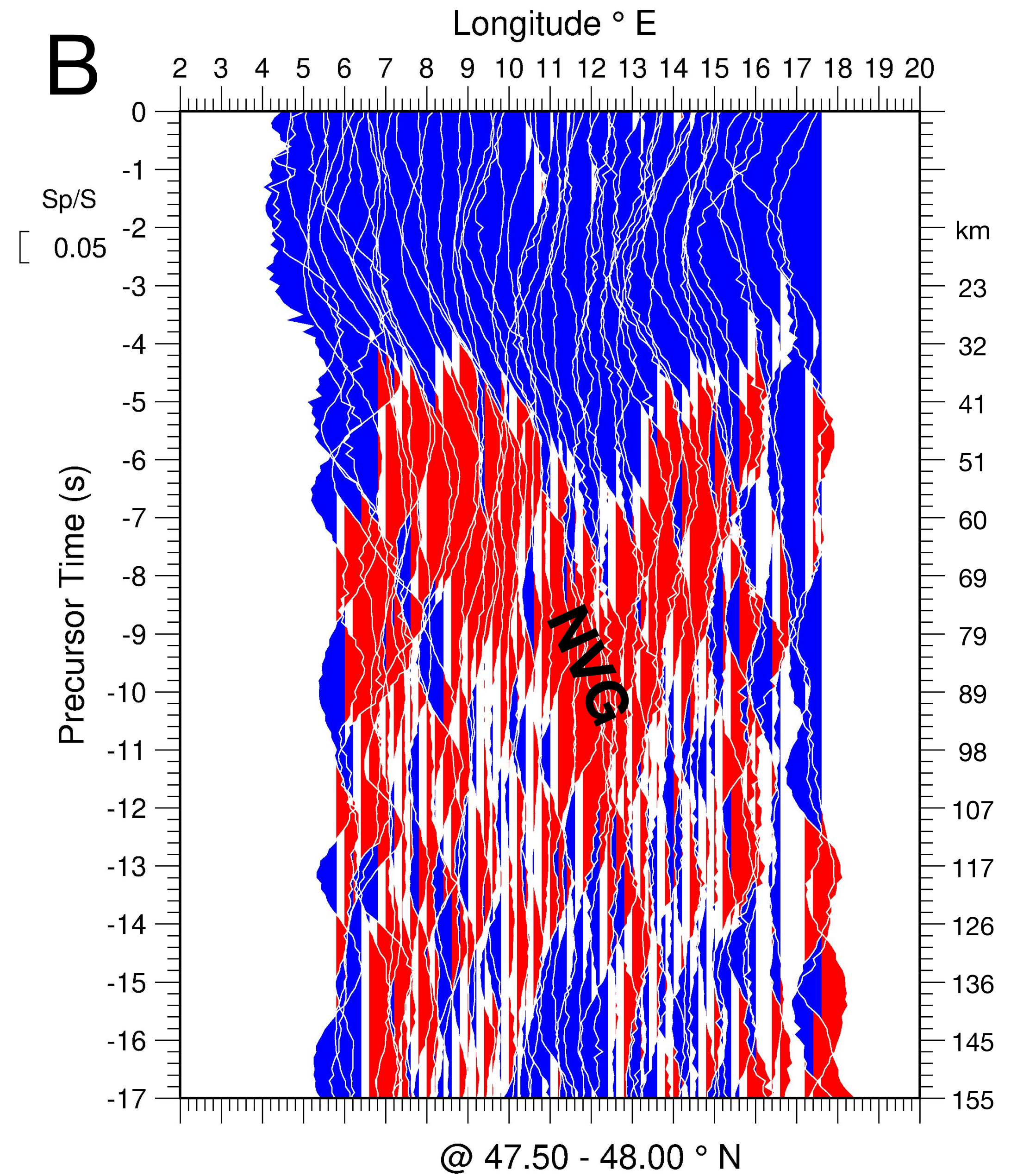
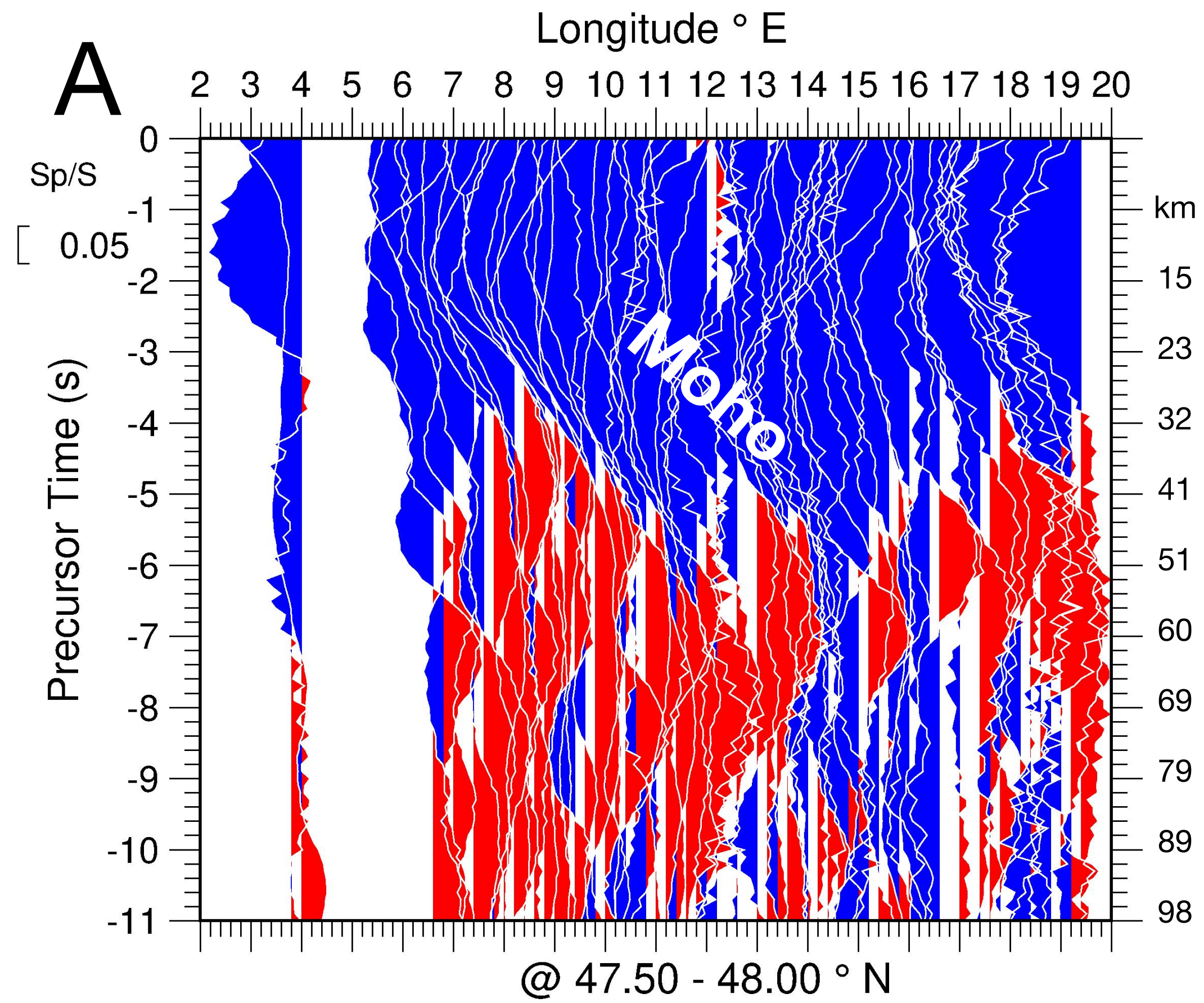


Fig. S16

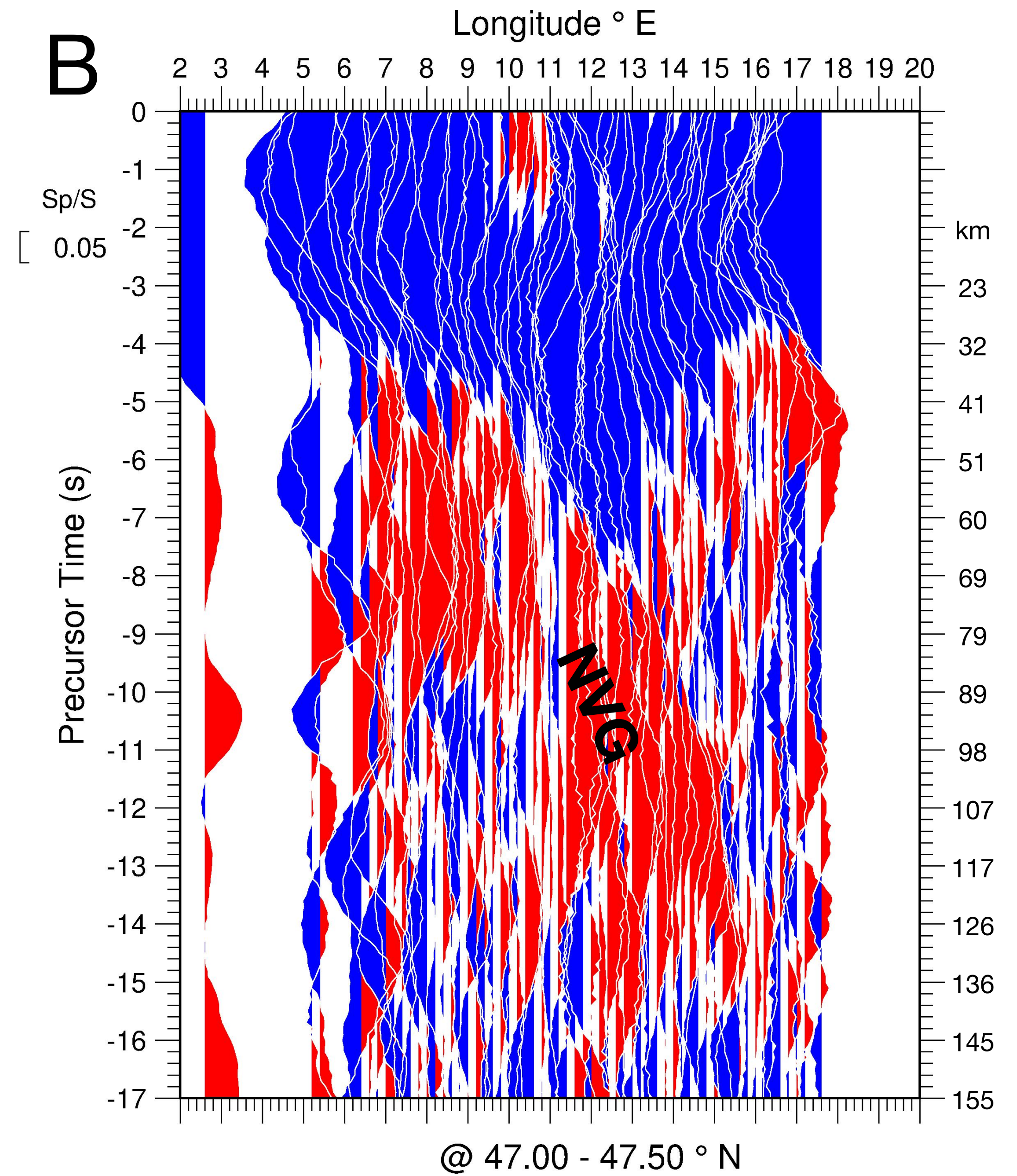
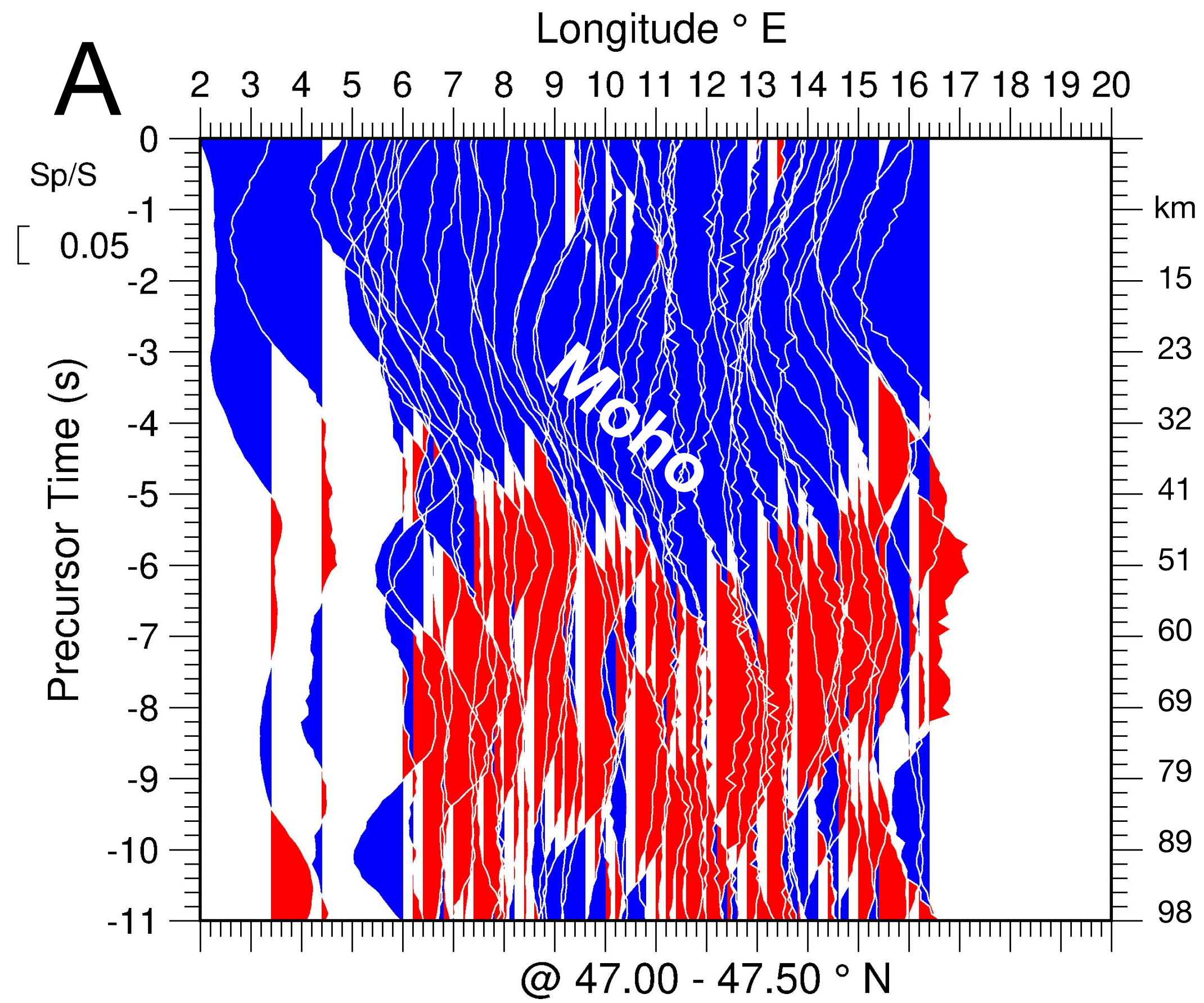


Fig. S17

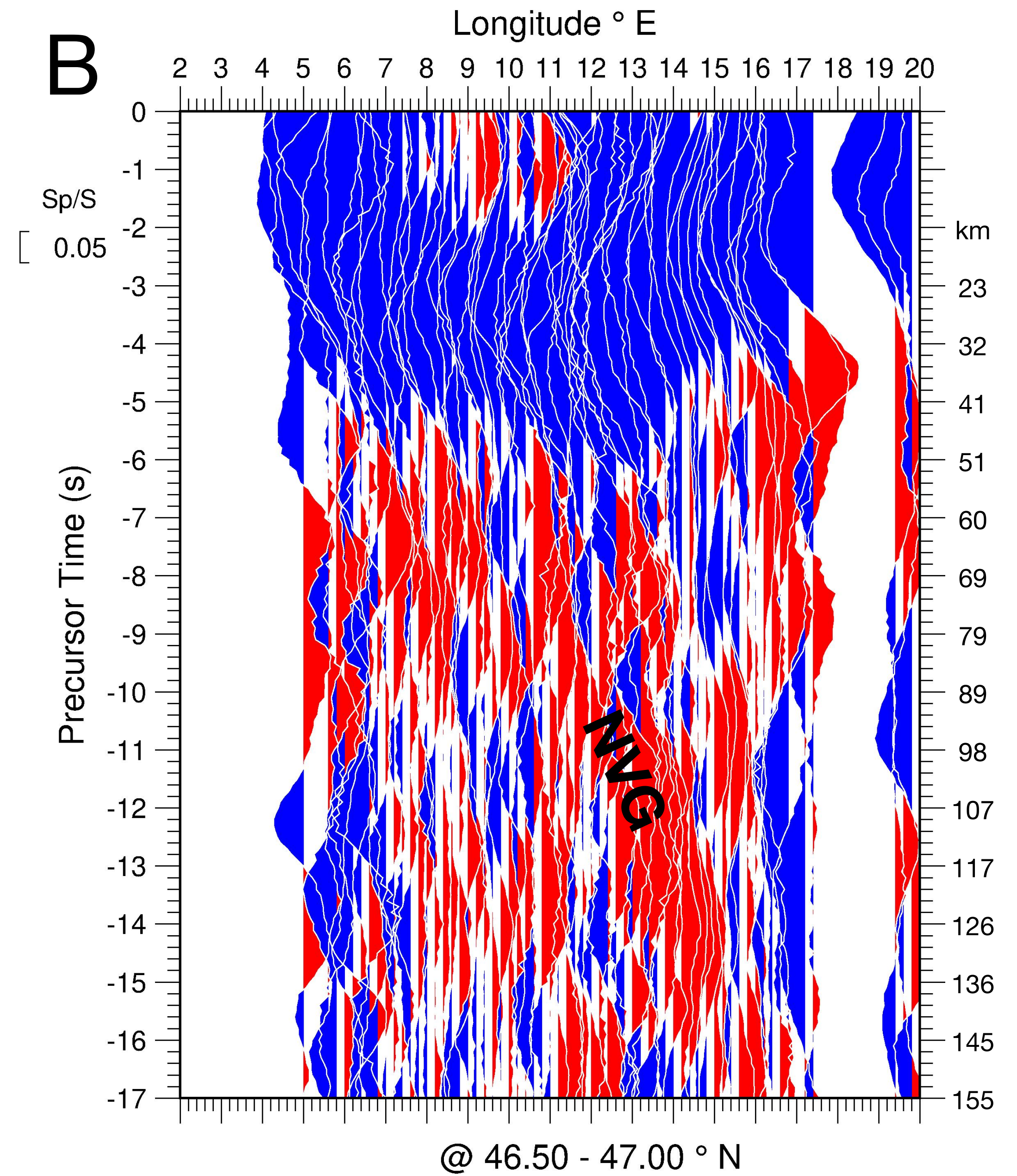
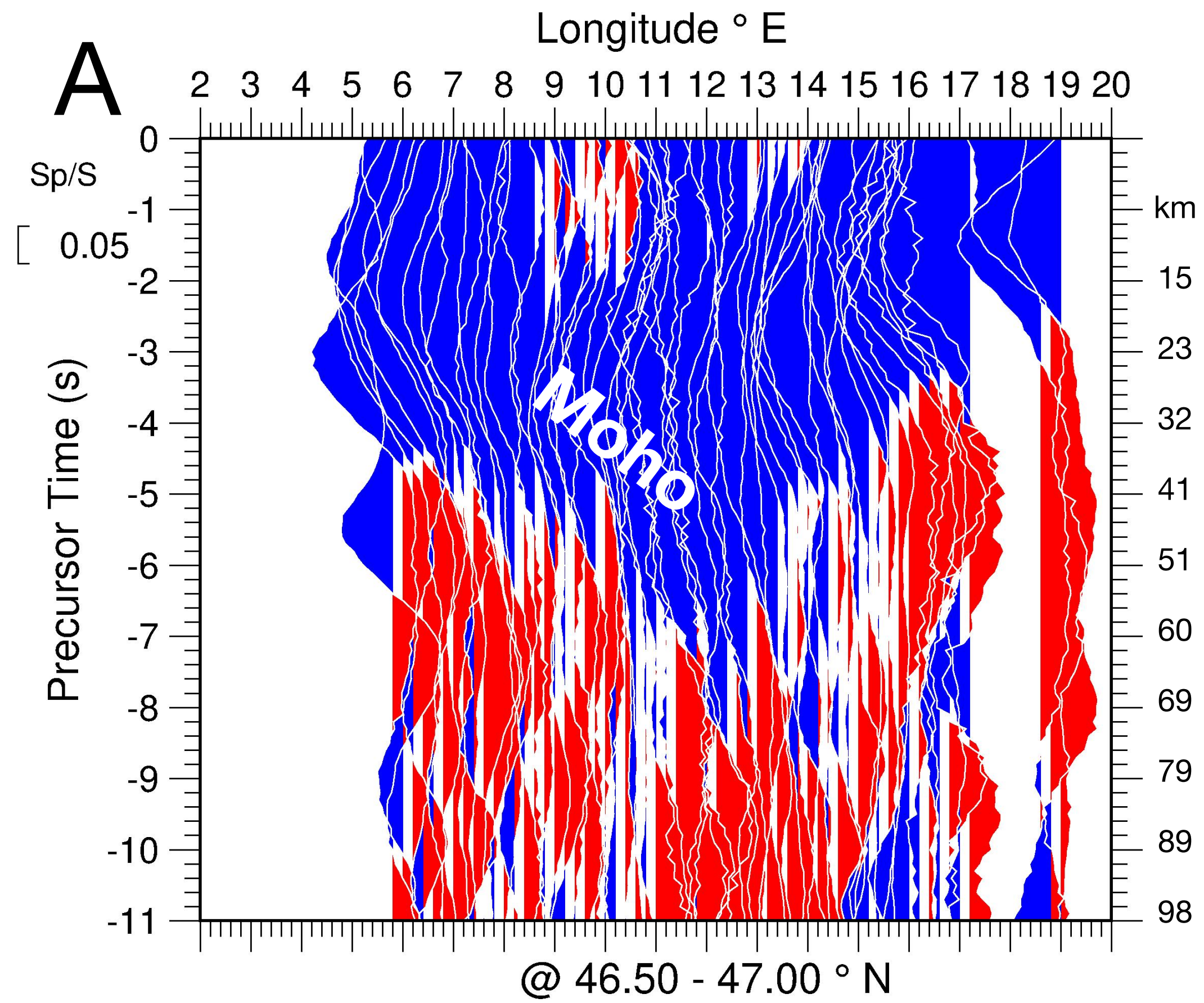


Fig. S18

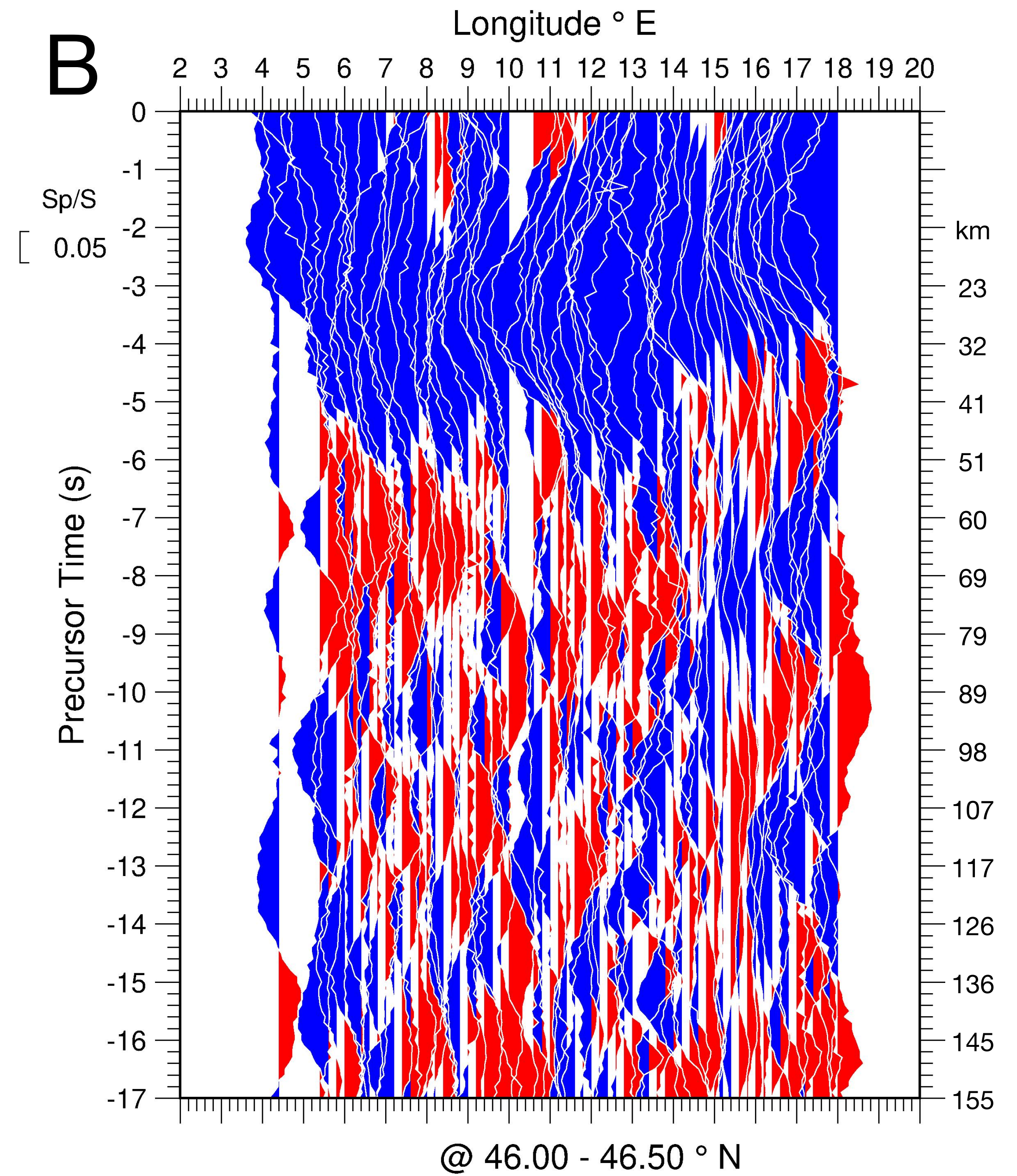
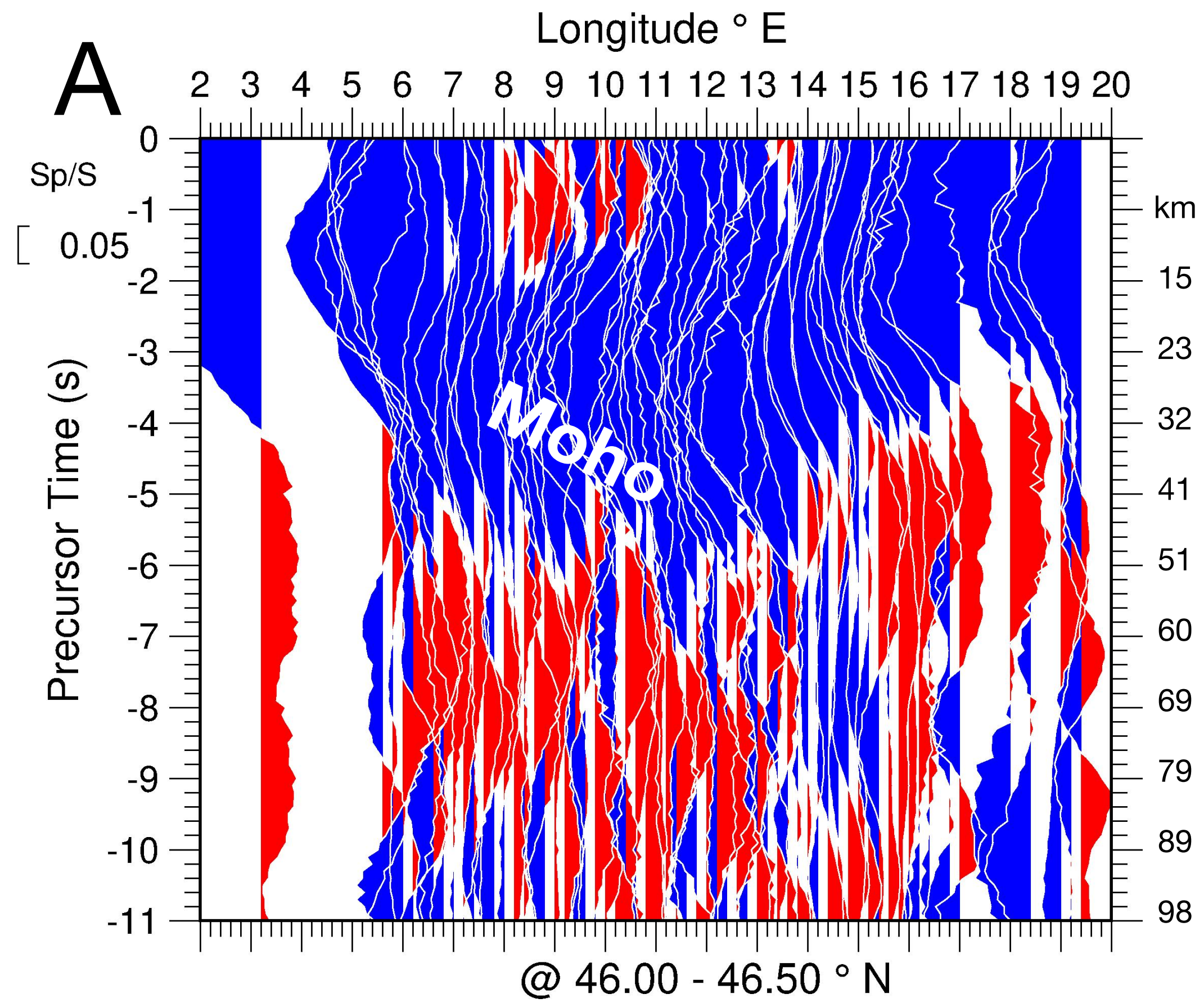


Fig. S19

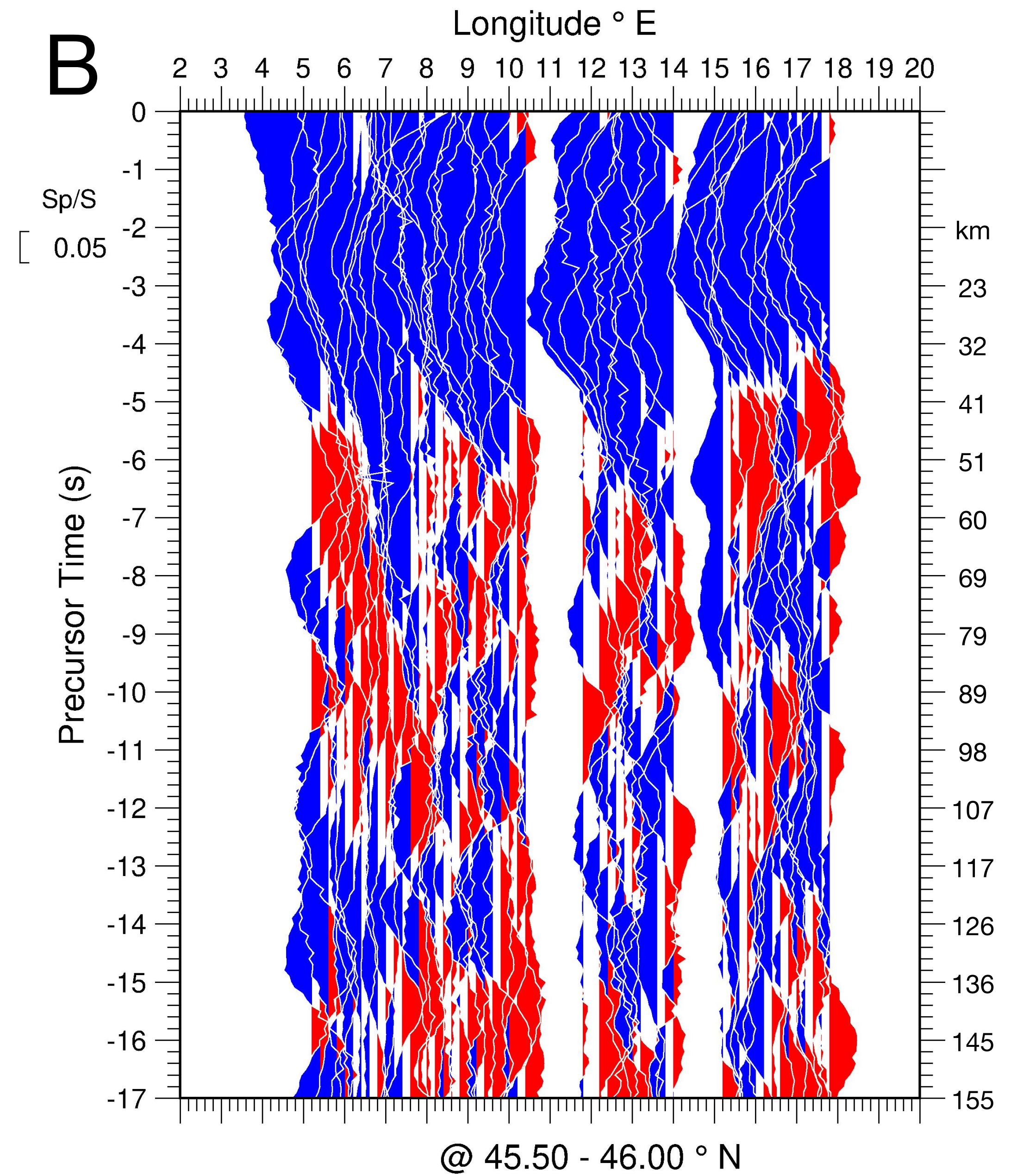
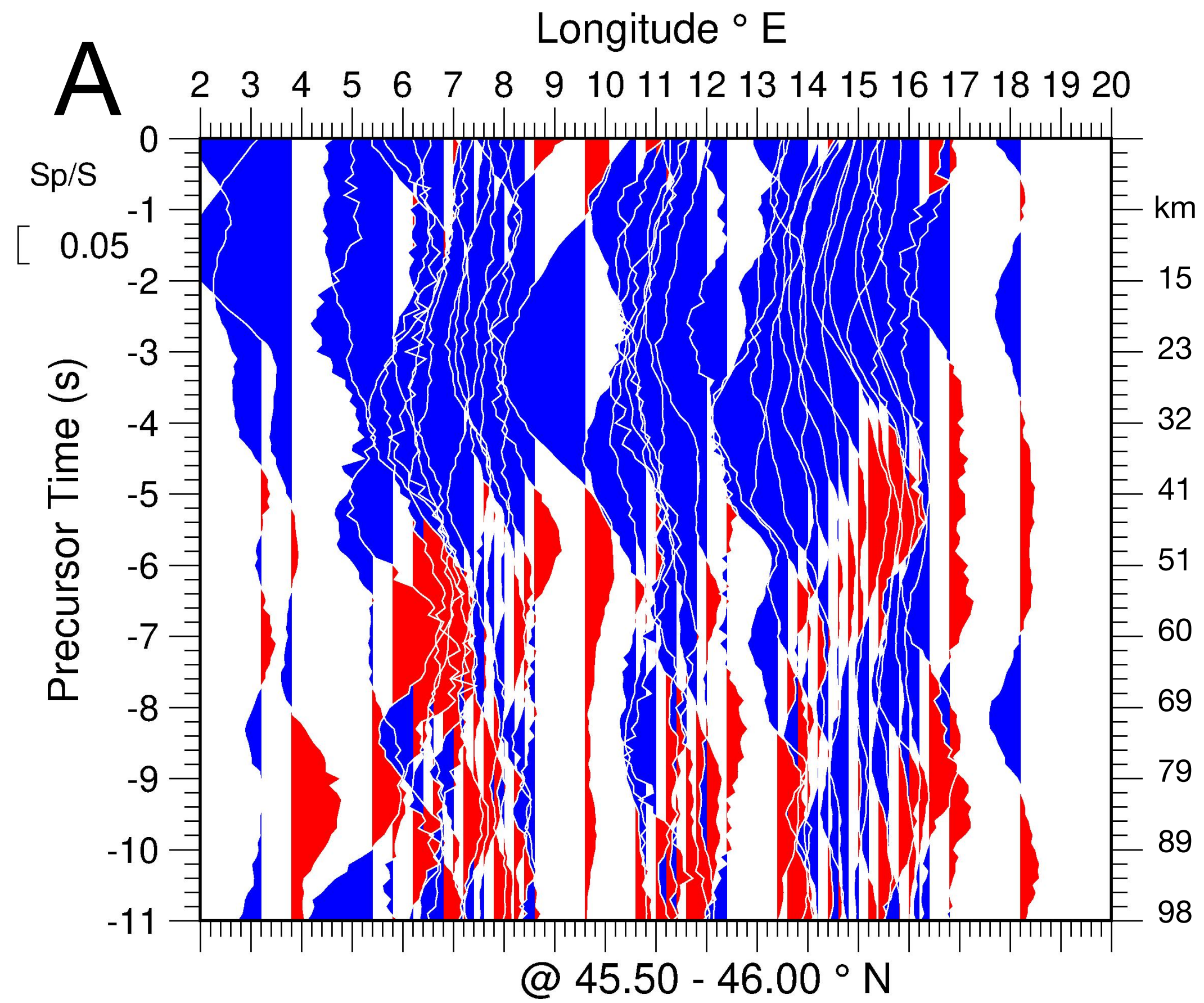


Fig. S20