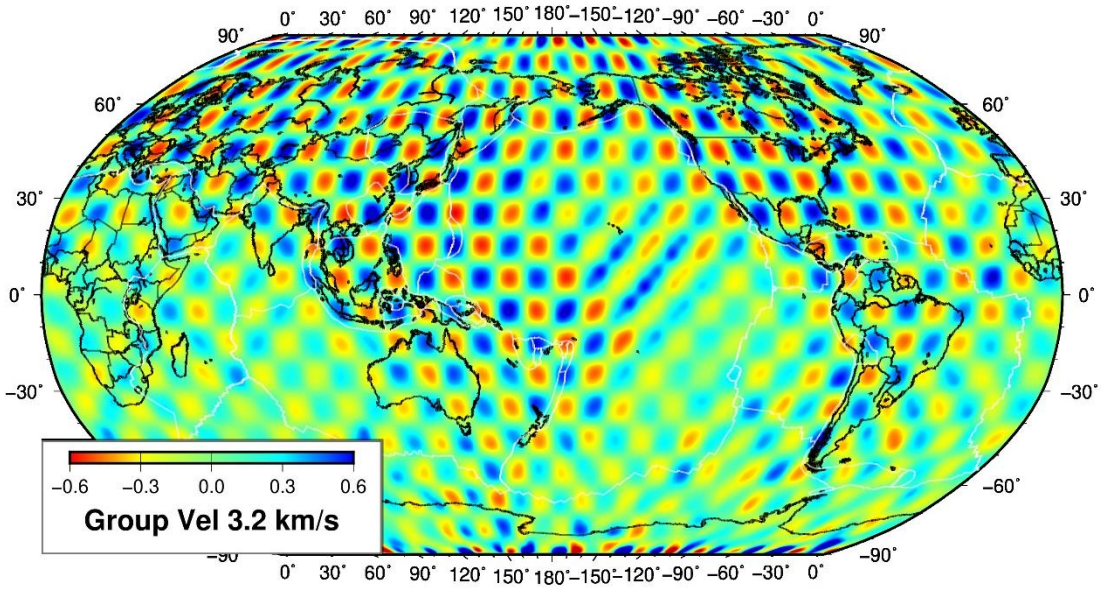

Figure S1: Checkerboard pattern for velocity tomography. This includes 65 seconds of Gaussian noise. Square sizes were 10 degrees. Input values were 2.8 and 3.9 km/s

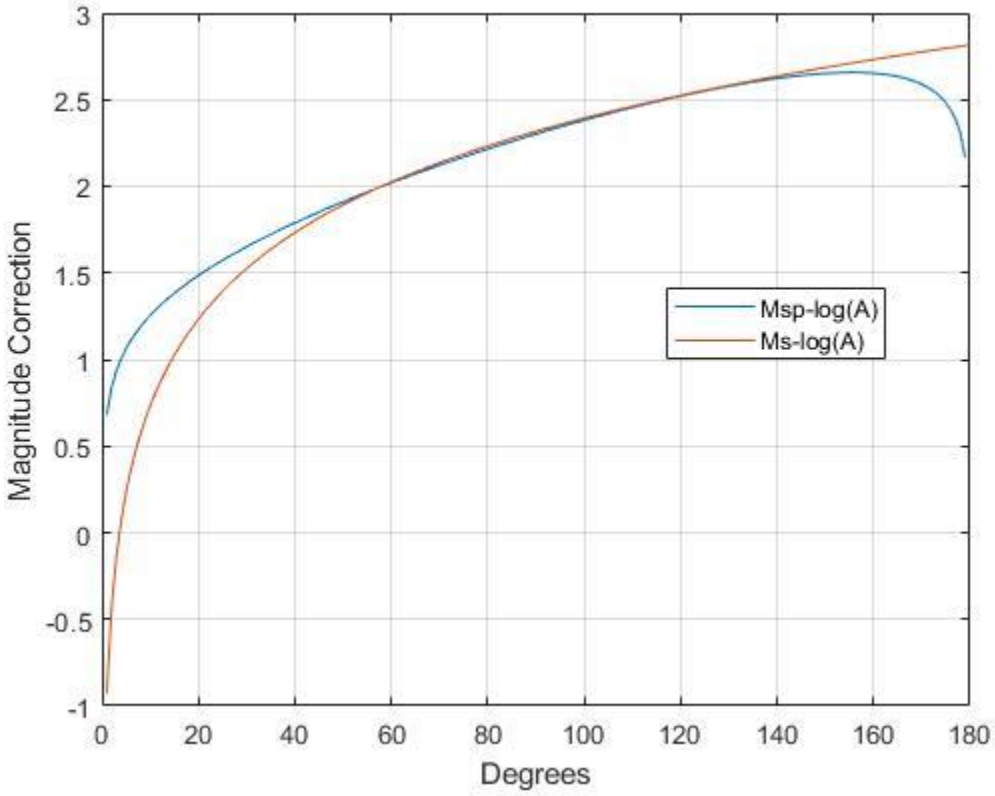

Figure S2: Magnitude corrections. These use the Msp and Ms scales of Equations 8 and 9. Note the agreement in the 20 to 160 km range where Ms is defined.

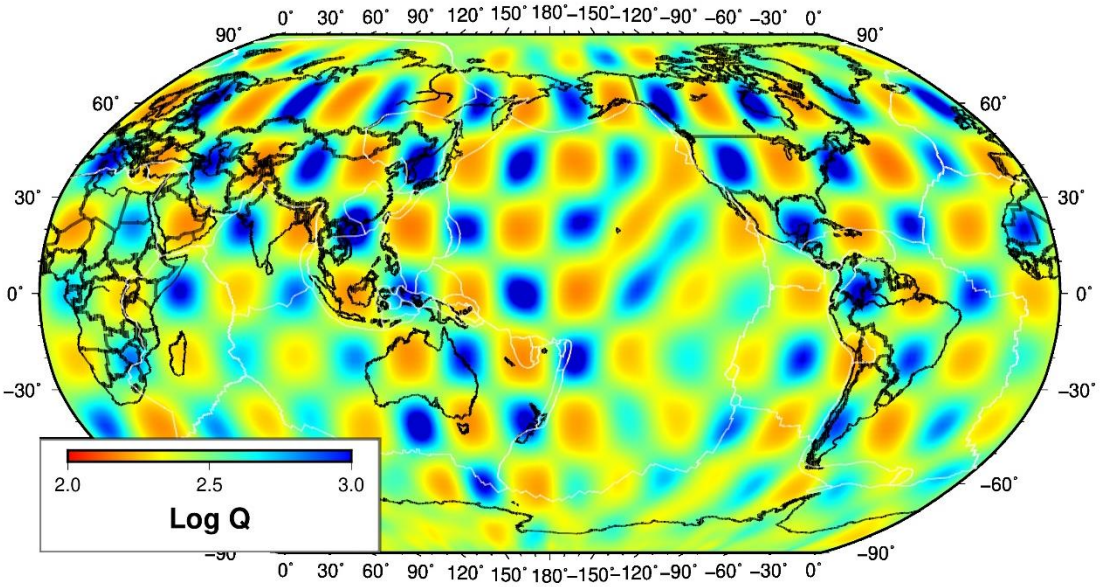

Figure S3: Checkerboard pattern for attenuation tomography. This includes 0.23 magnitude units of Gaussian noise. Square sizes were 15 degrees. Input values were 171 and 897.