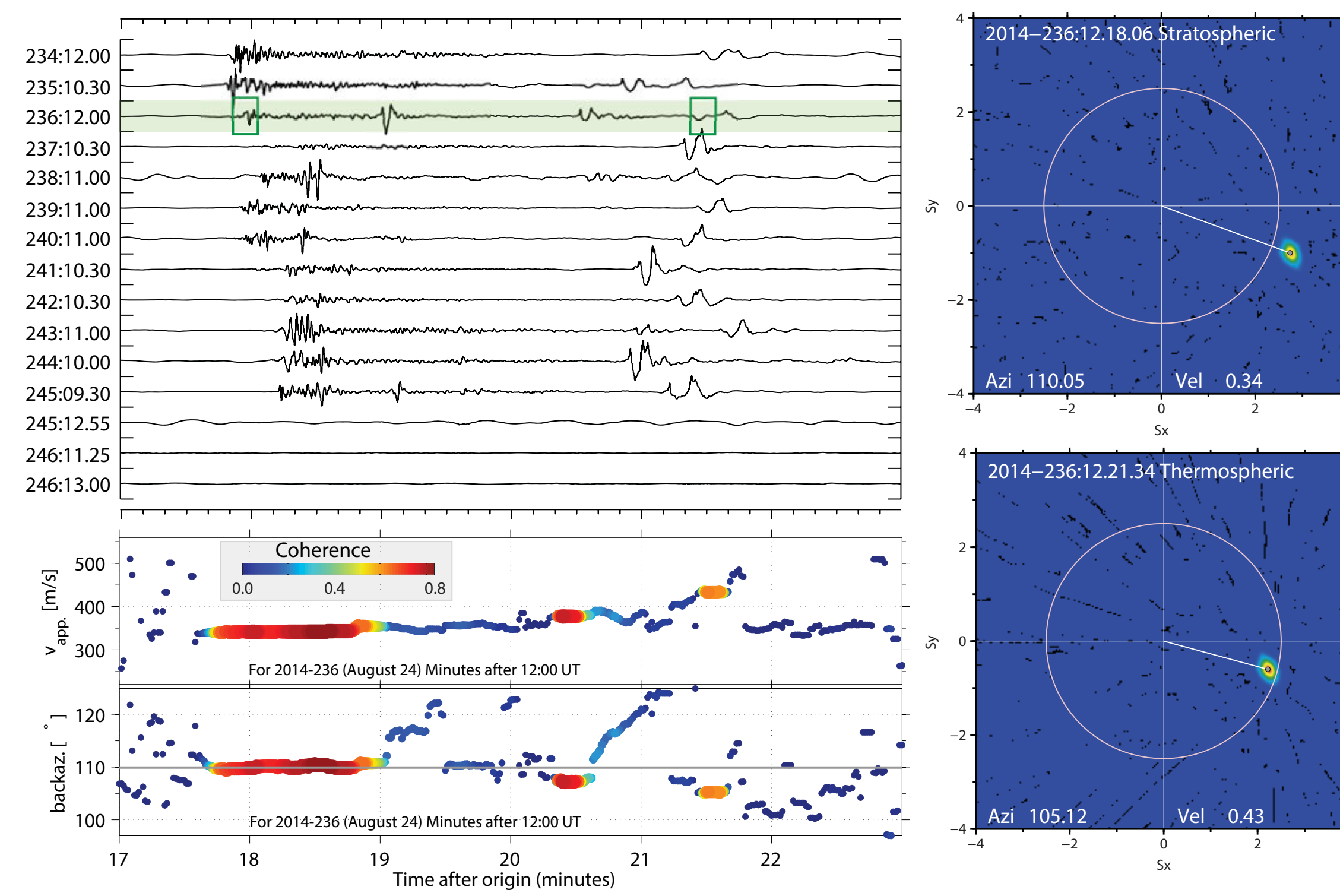
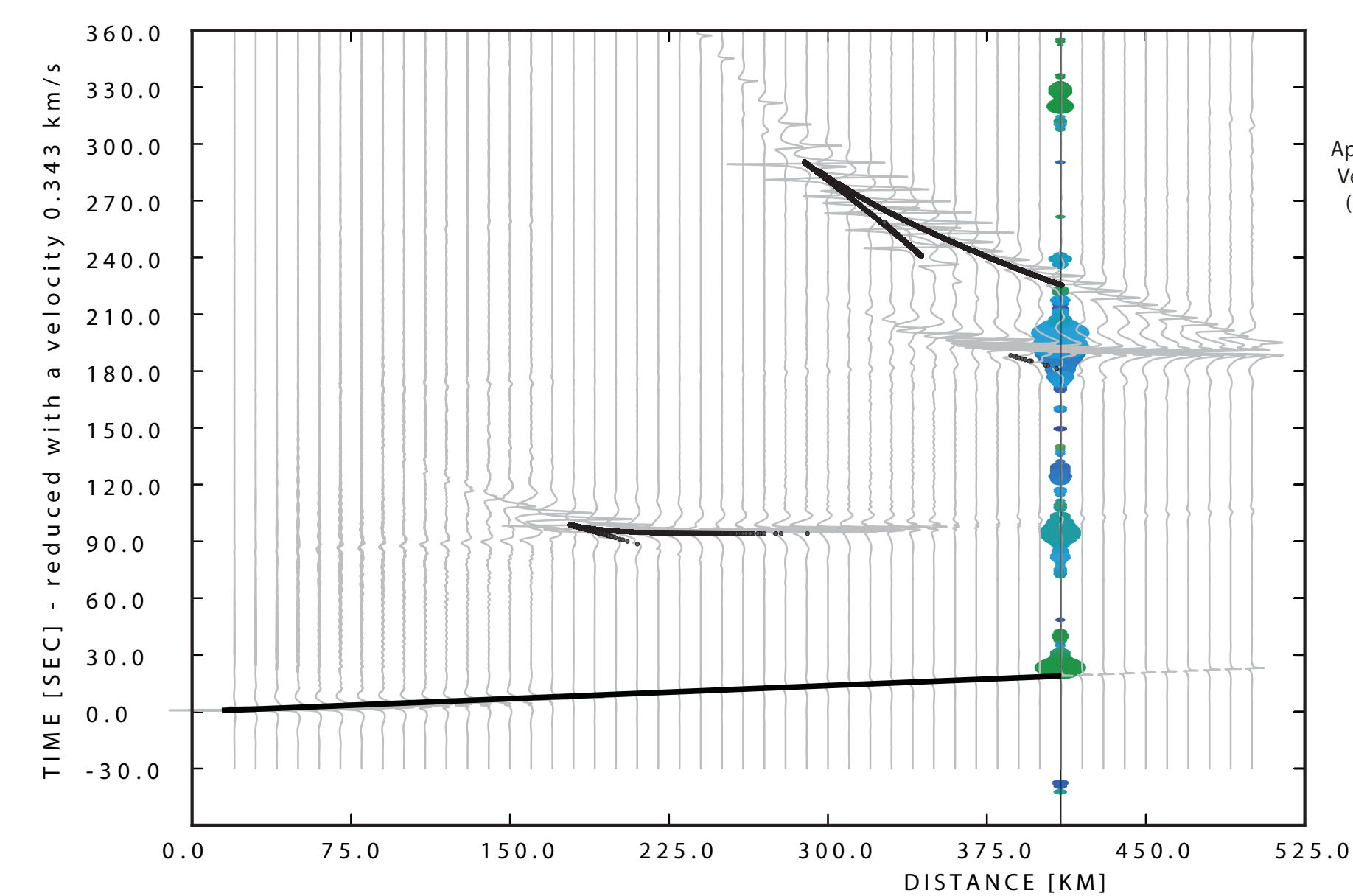


The Infrasonic Wavefield over Different Temporal Scales

Many of the sources take place all-year-round allowing us to see seasonal changes.

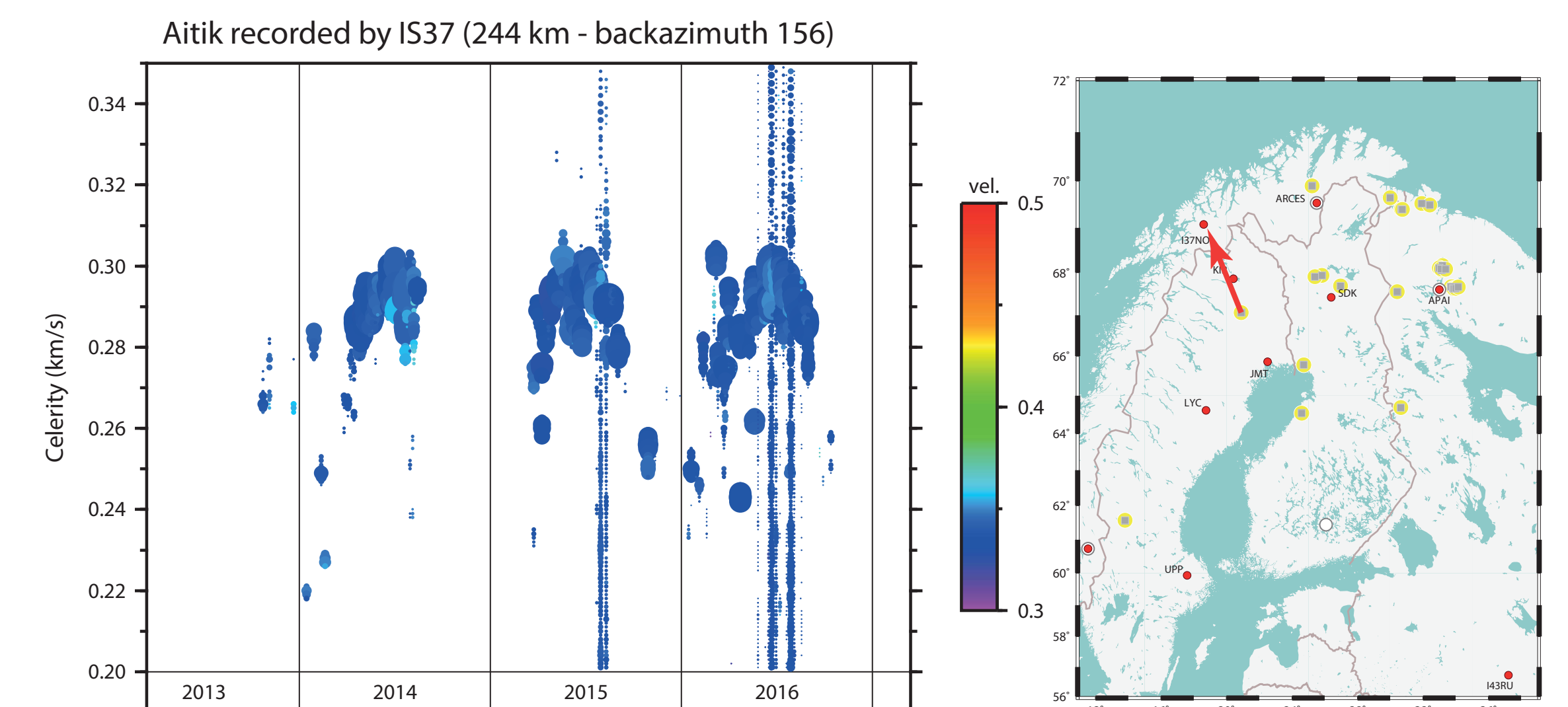


The infrasonic wavefield from a given site changes significantly with the season. Here we see how one year of mining explosions at Aitik are recorded at IS37, 245 km to the North West. In the wintertime, infrasound is rarely observed (consistent with the stratospheric winds) and, in the summertime, the traveltime is a minimum in June/July (for the most efficient wave guide).



We also need to make sure that we can model the arrivals. For this (accidental) explosion in northern Norway, raytracing (black lines) is only able to predict 3 of the 4 observed arrivals. A full waveform (reflectivity) calculation - grey lines - predicts them all.

We here examine infrasound recordings from repeating explosions over several seasons.



Explosions at the Kostamuksha mine in Russia are also recorded infrasonically at IS37. The picture is similar to Aitik with no winter signals and a sinusoidal variation of traveltime in the summer. However, at this far greater distance, we see multiple stratospheric arrivals. This too needs to be accounted for when locating events.