SEA Plots

* Corrected sheet arrival time
  + t\_correct = t\_cs - (t\_P – t\_H)
* Converted all local magnetometer coordinates to SM coordinates
* made all magnetometer plots cross 0 nT at the corrected arrival time to look for large scale magnetic response across all plots
  + Chose only stations located between 45 and 135 degrees colatitude to see if a more coherent pattern emerged with less background noise
* Took OMNIWeb data for each event and used the Biot-Savart integrator to determine the expected precursor for each
  + Converted integrator results into SM coordinates
* Create three simultaneous plots for the three coordinate directions in the SM coordinate system

The first SEA plots were created assuming the current sheet arrival happened at the point at which the IMF reacted. Arrival time error was compensated for by adding to this time the time difference between the pressure pulse and the SYM/H response using OMNIWeb data. All magnetometer data was converted from local magnetic coordinates to SM coordinates so they could be directly compared. All plots were shifted along the y-axis so that they crossed the 0 nT mark at the exact moment that the current sheet arrives in order to look for large scale magnetic response across all plots. The first SEA plots were impossible to read so the pool of possible magnetometers was limited to those located between 45 and 135 degrees colatitude to see if a more coherent pattern emerged. OMNIWeb data for each event was entered into the Biot-Savart integrator to determine the expected precursor for each, and these results were converted to SM coordinates using spacepy so they could be directly compared with the magnetometer data. The magnetometer and integrator data, now in a common coordinate system, were split up into their respective x, y, and z coordinate directions. A separate plot was made for each of these directions, containing all the magnetometer data and integrator results for the corresponding direction.