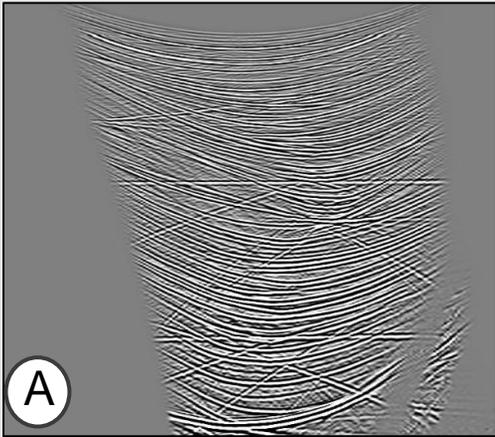
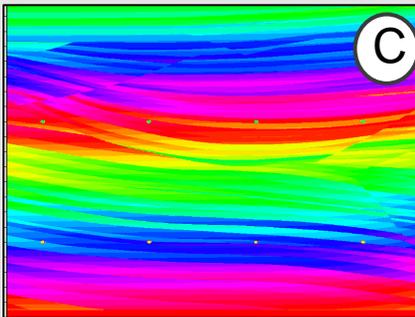
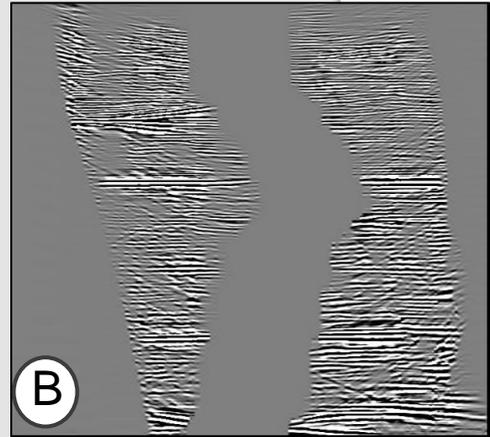


# Diffraction Imaging

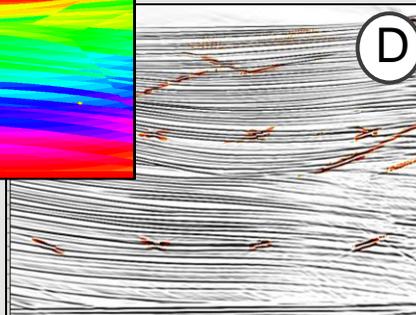
Is there a way to image faults only? Not the big ones, but the tiny ones which are crucial for the reservoir characterization? You can just eliminate the reflection energy from the Gathers and keep the diffracted Energy. You cannot do this? We can. With Specularity Gathers



*Specularity Gathers show the illumination angle at each depth location with reflections curved and diffractions flat (A). After eliminating all reflection energy (curved) from the Gathers the diffraction Energy remains and can be stacked (B).*



*Synthetic model with green dots showing small faults (C).*



*Stacked Specularity Gathers superimposed on Depth Migration (D). Full 3D image of fault locations (E).*

Often it is more important to image the small scale faults than the structure. Either to identify the reservoir or just to know where not to drill. Instead of creating any depth or time migrated Gathers it is possible to create Specularity Gathers which show the illumination angle. Now, the reflections can be fully eliminated from the Gathers. After stacking the diffracted energy the result is being superimposed on a migrated result showing the exact location of the faults.

