Active deformation of the Shargyn Basin

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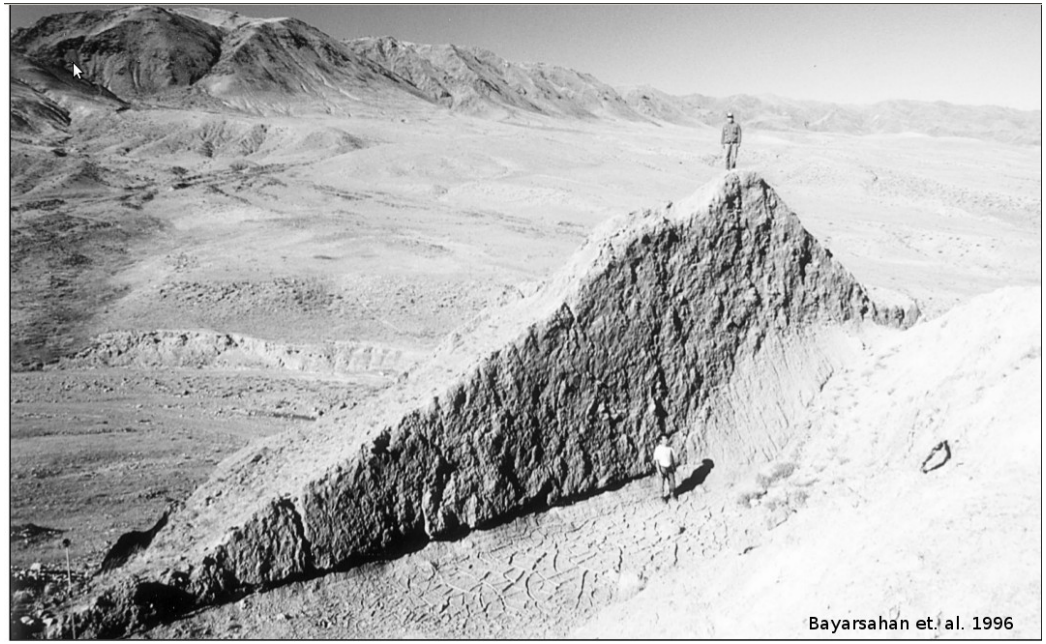
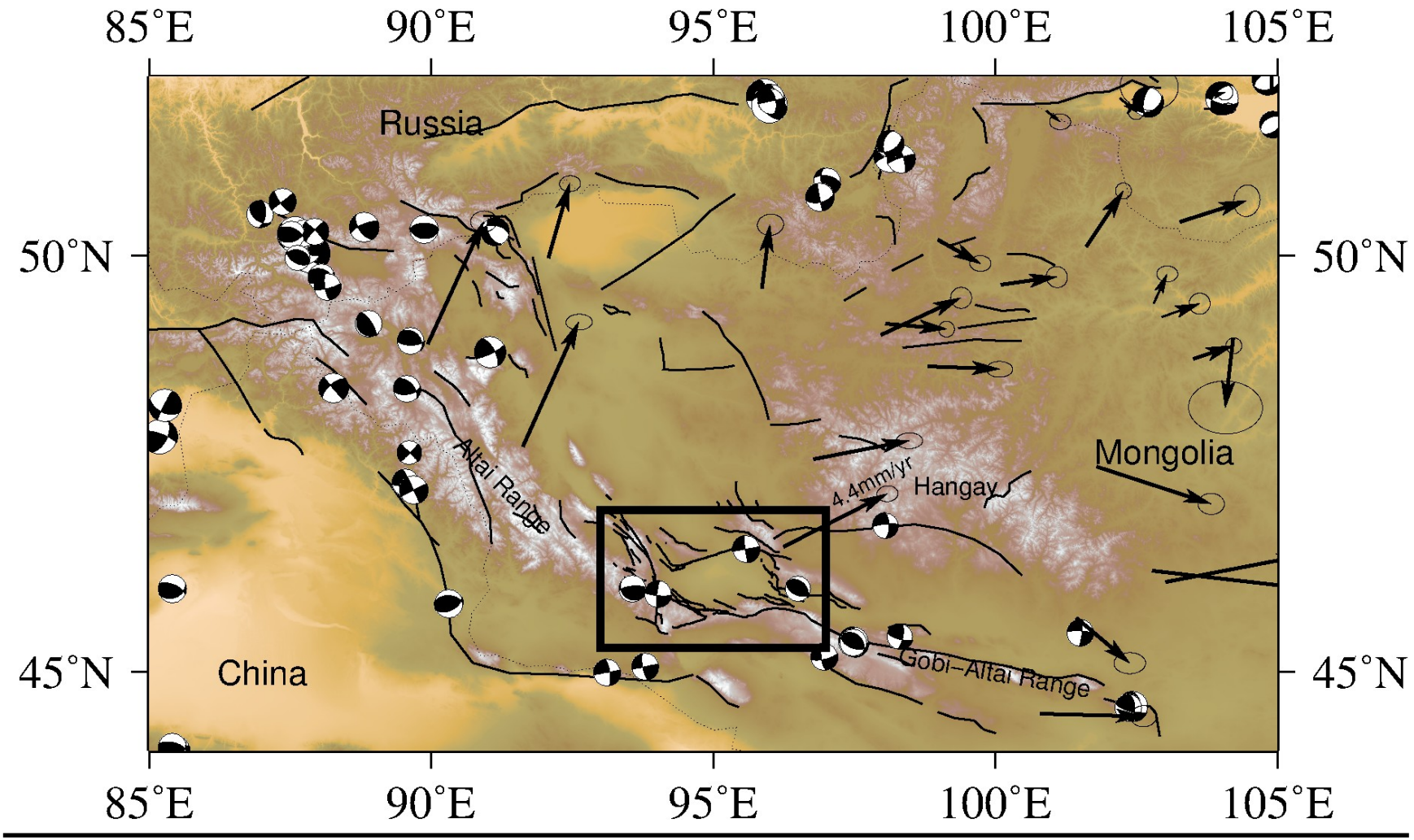
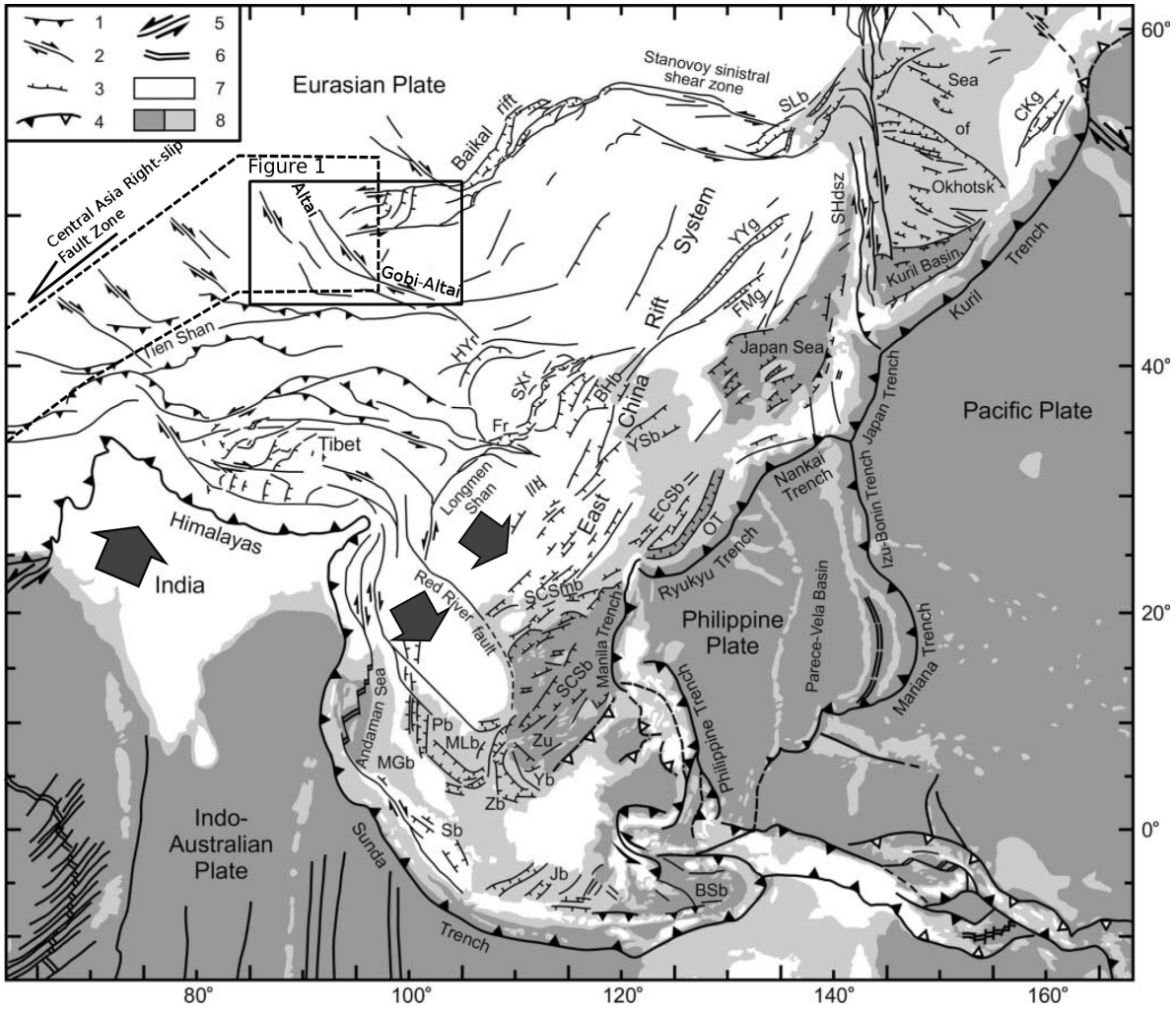


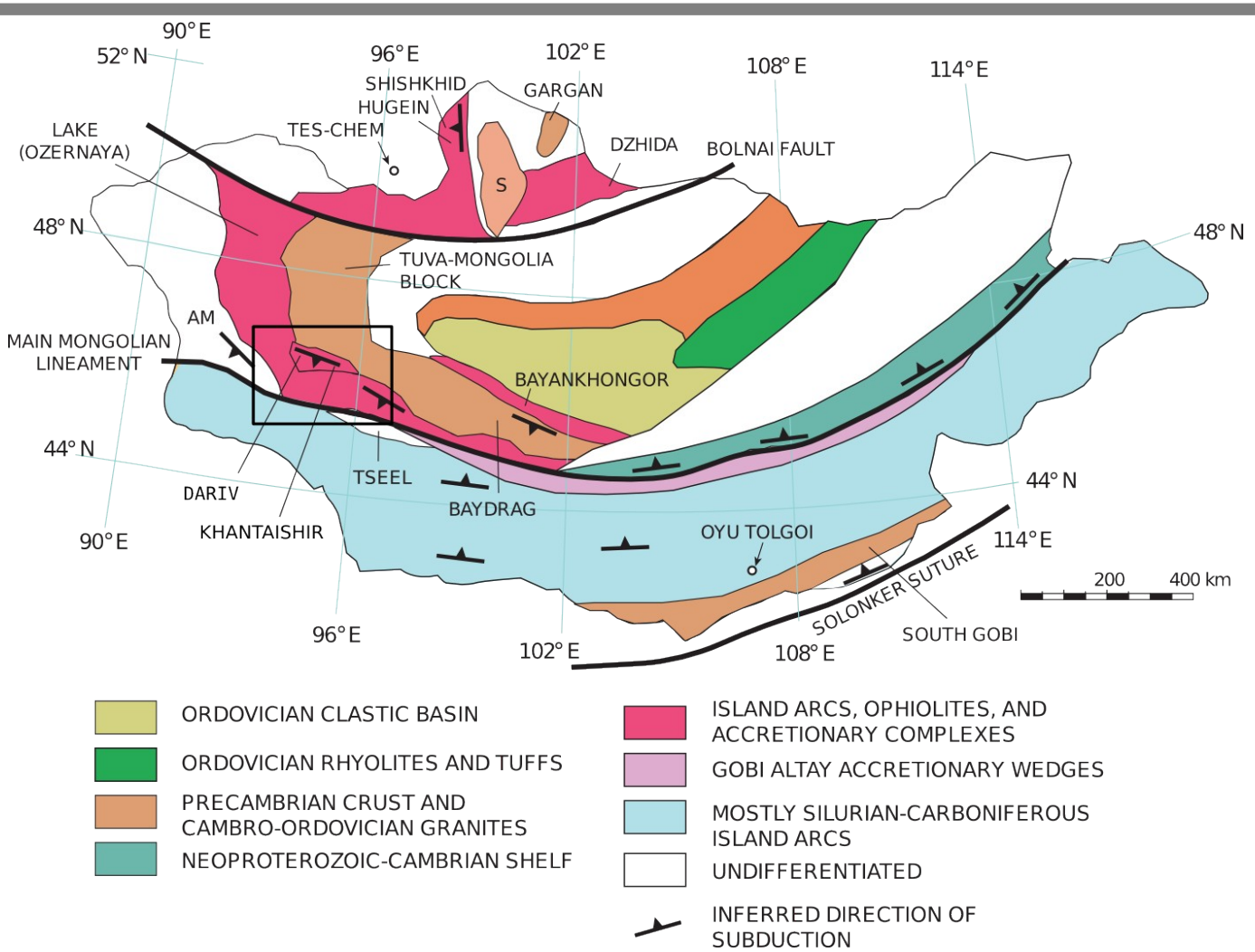
Mongolian deformation = transpressional conjugate strike-slip pair



Mongolian deformation: indentation and slab rollback



A complex tectonic history controls the location of active faults



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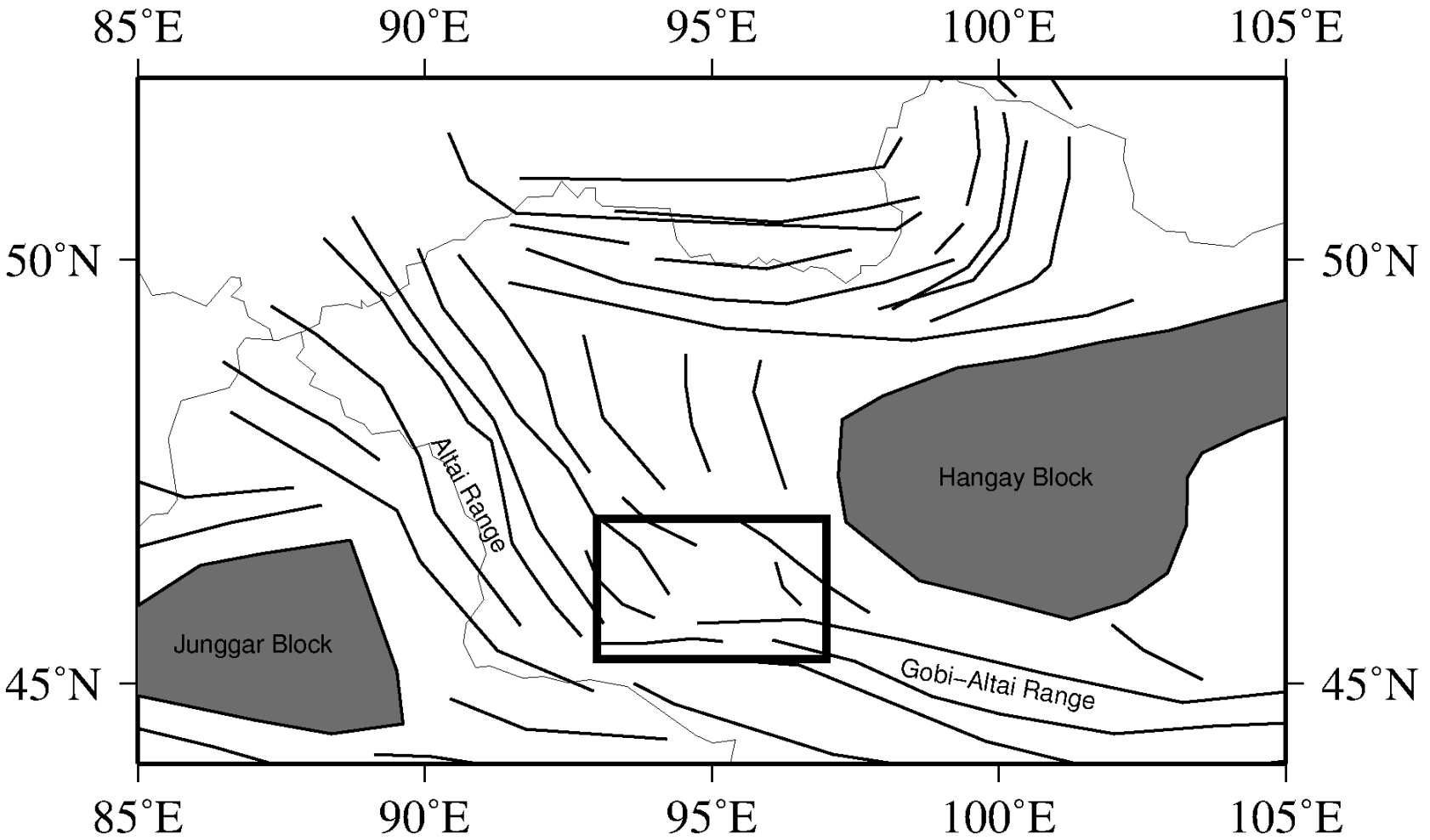
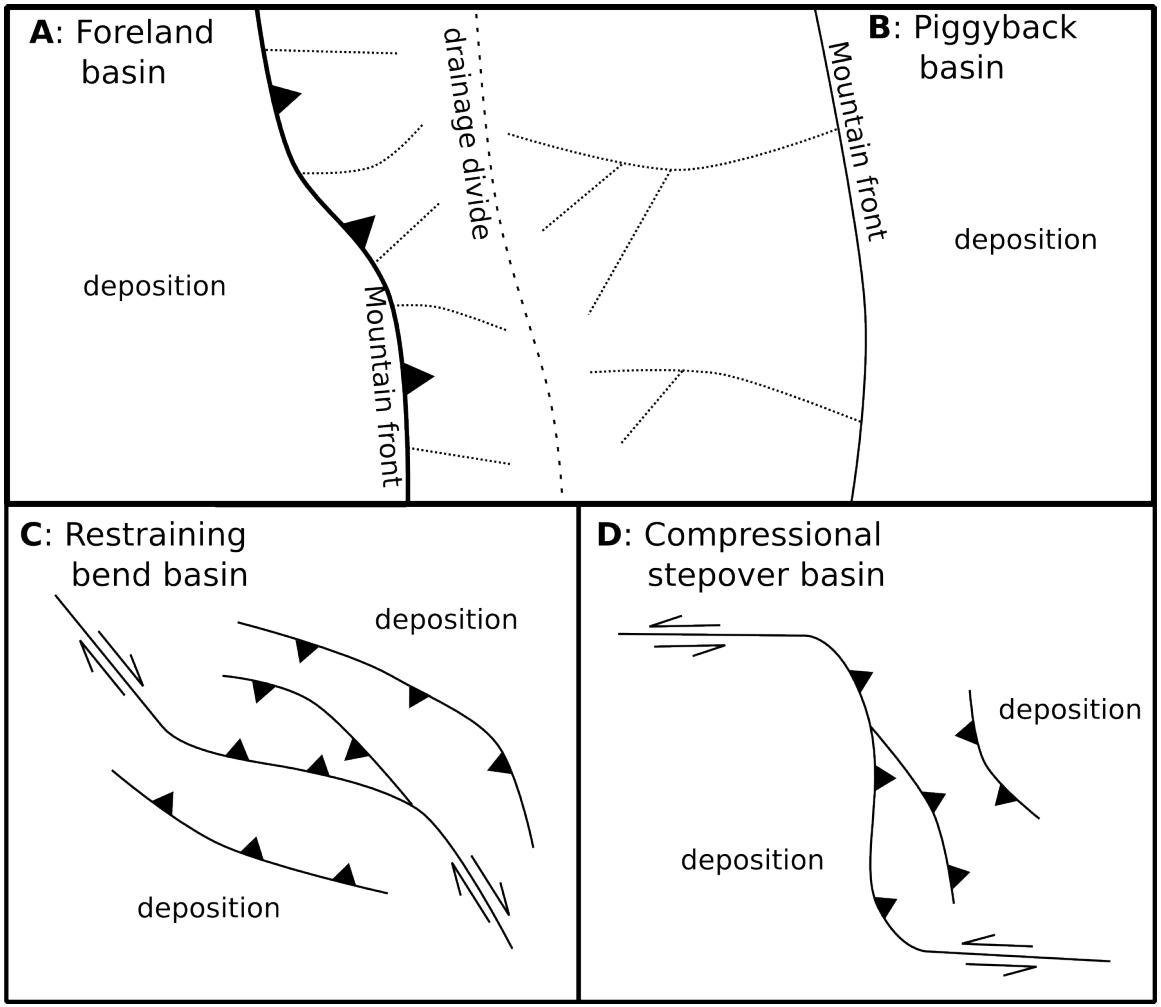
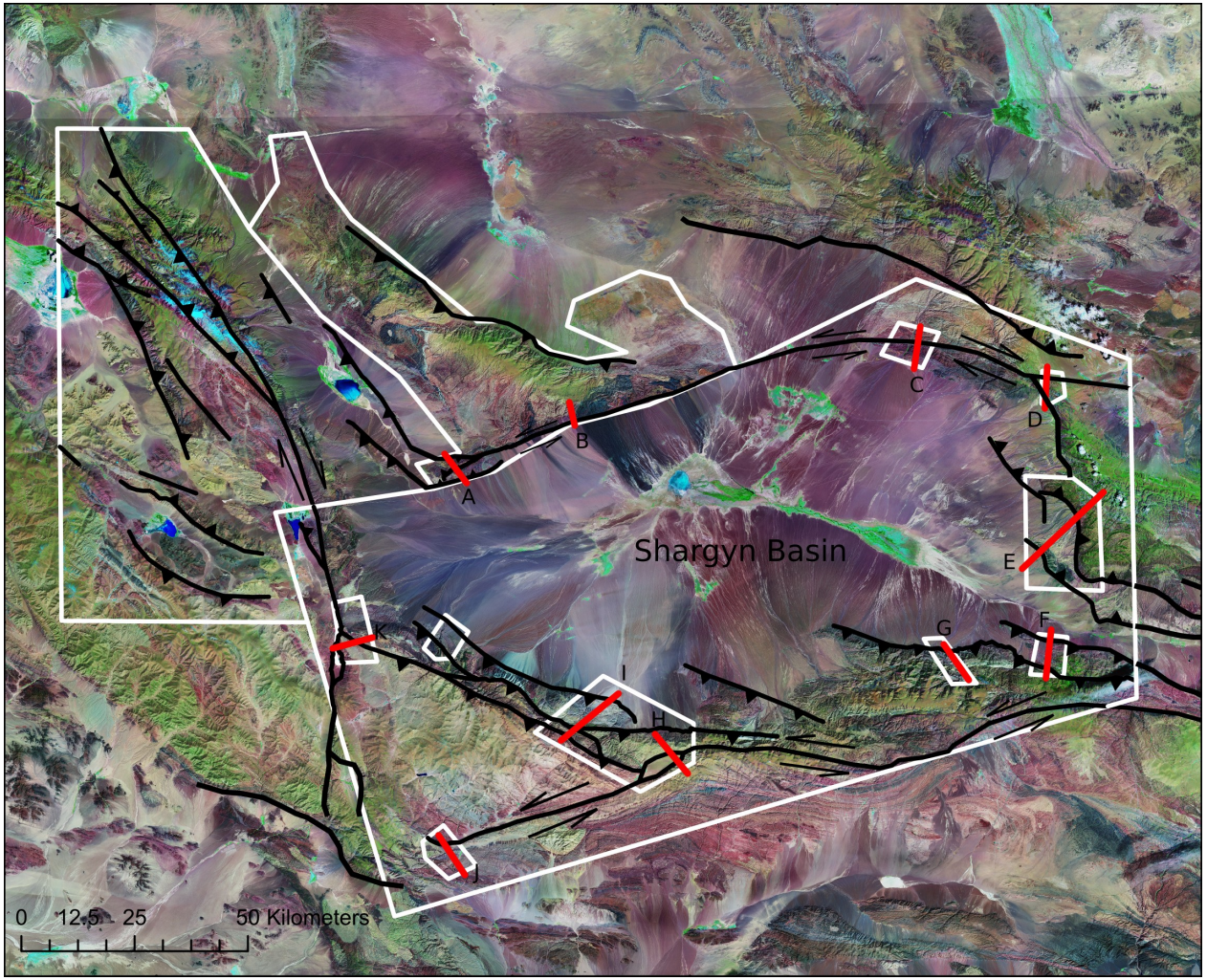


Transpressional basins come in four general types

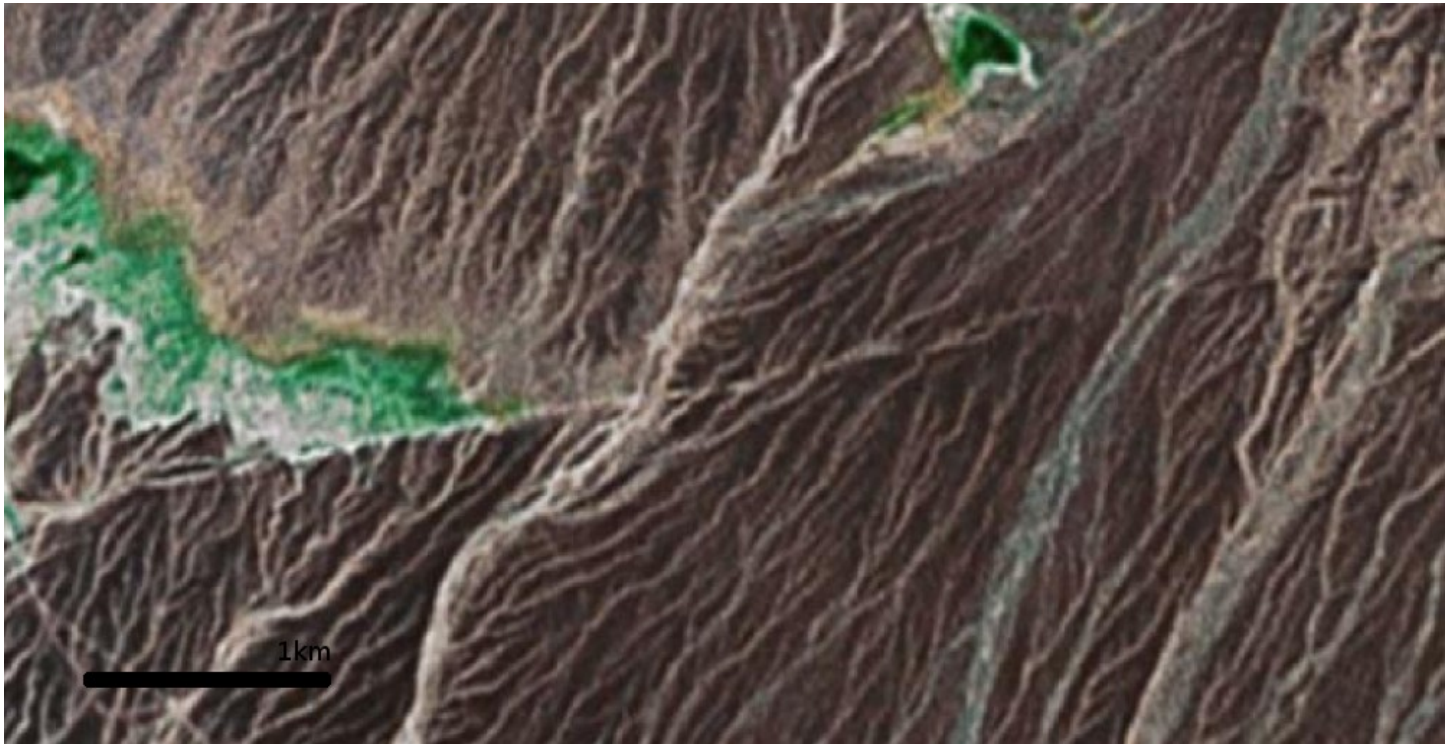


Combination compressional stepover and intersection wedge



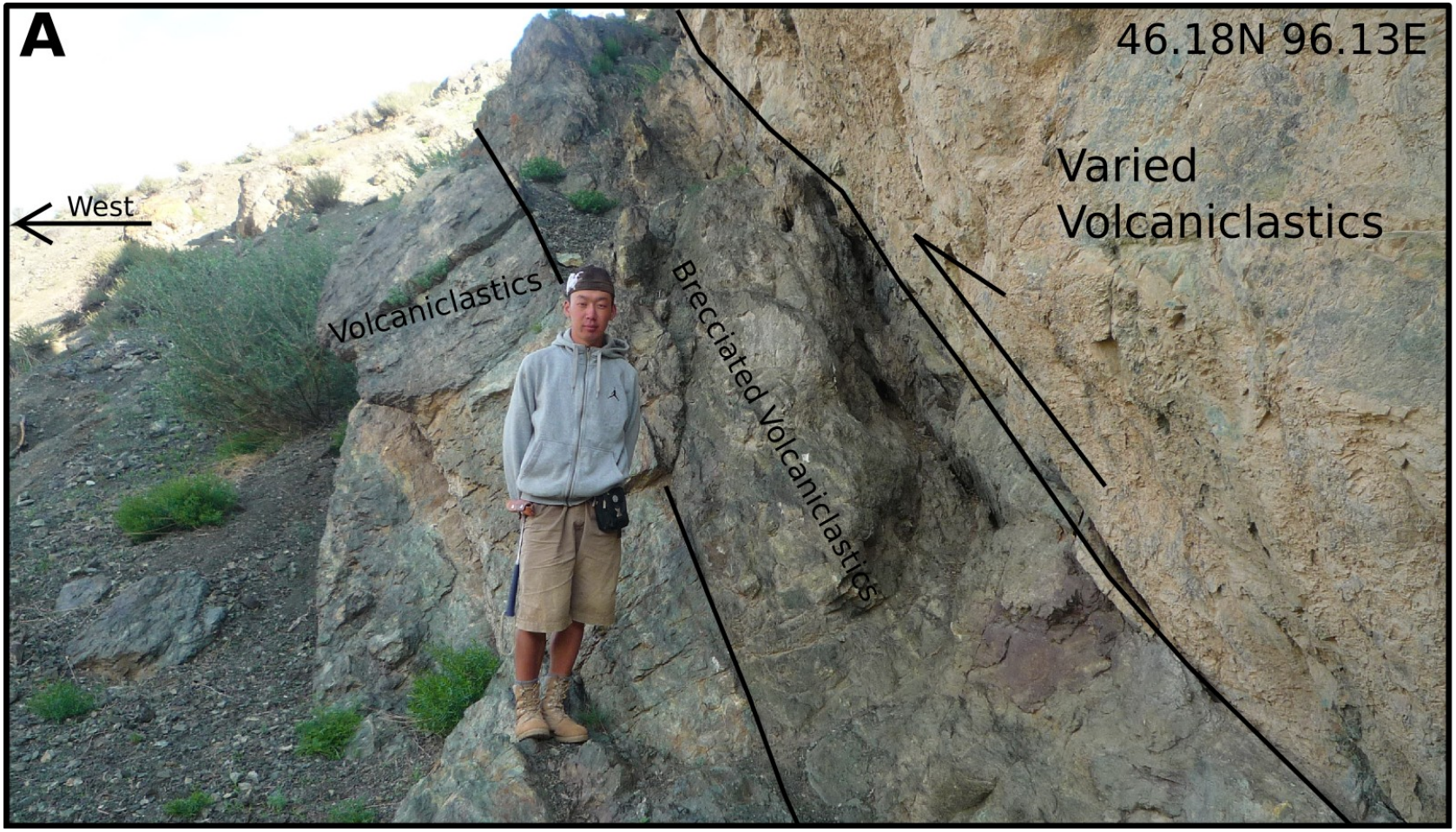
Some faults are clearly visible on satellite imagery.

In this photo, the Shargyn fault is offsetting stream beds.



Mongola 2012 Fieldwork

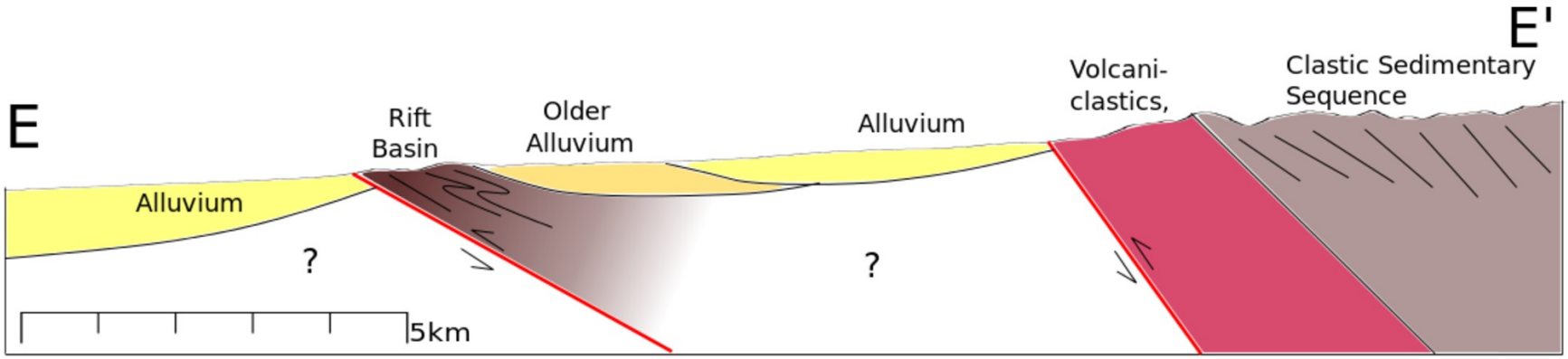
Khantaishir fault exposure



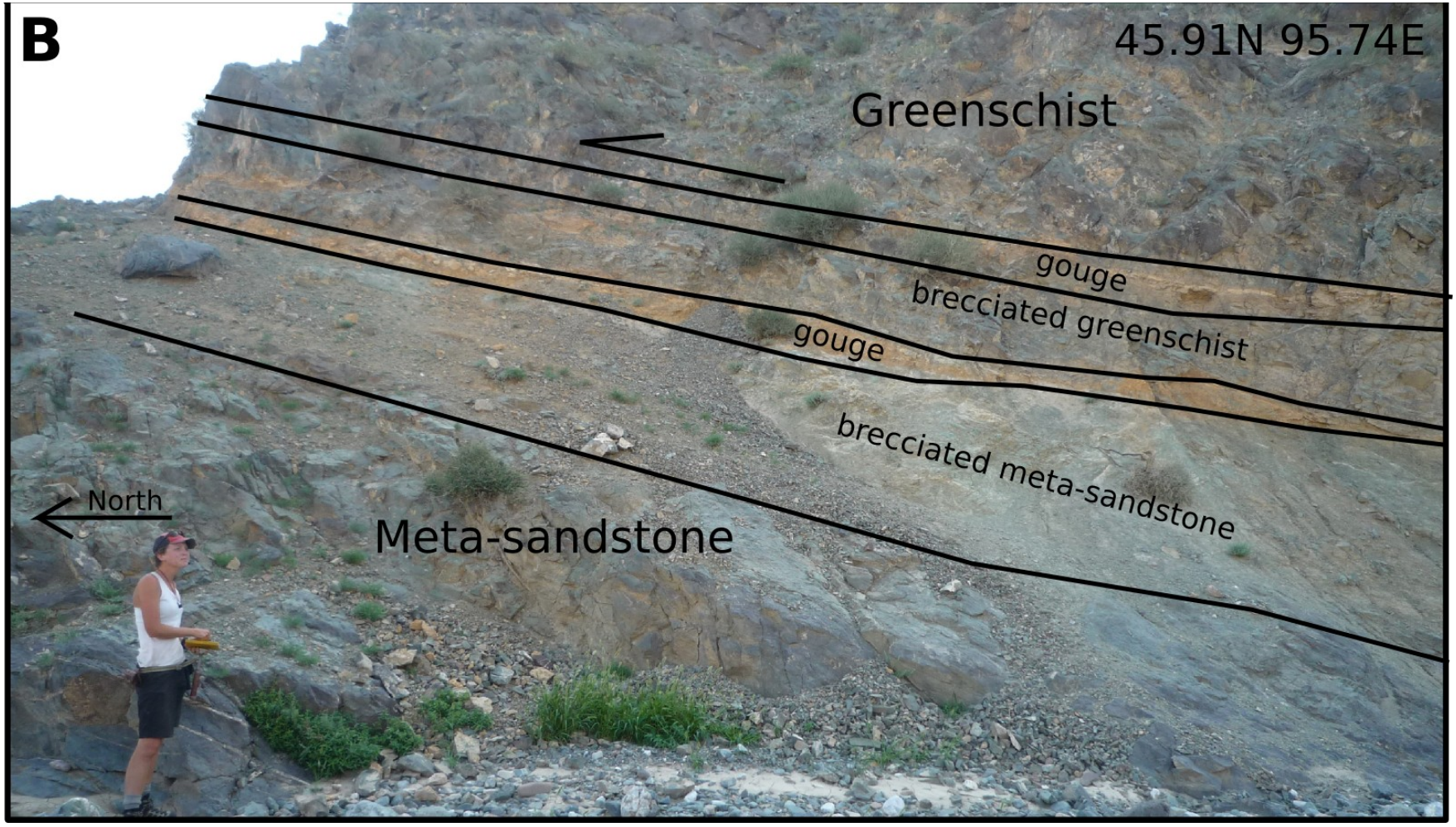
Khantaishir

The thrust portion of the compressional stepover.

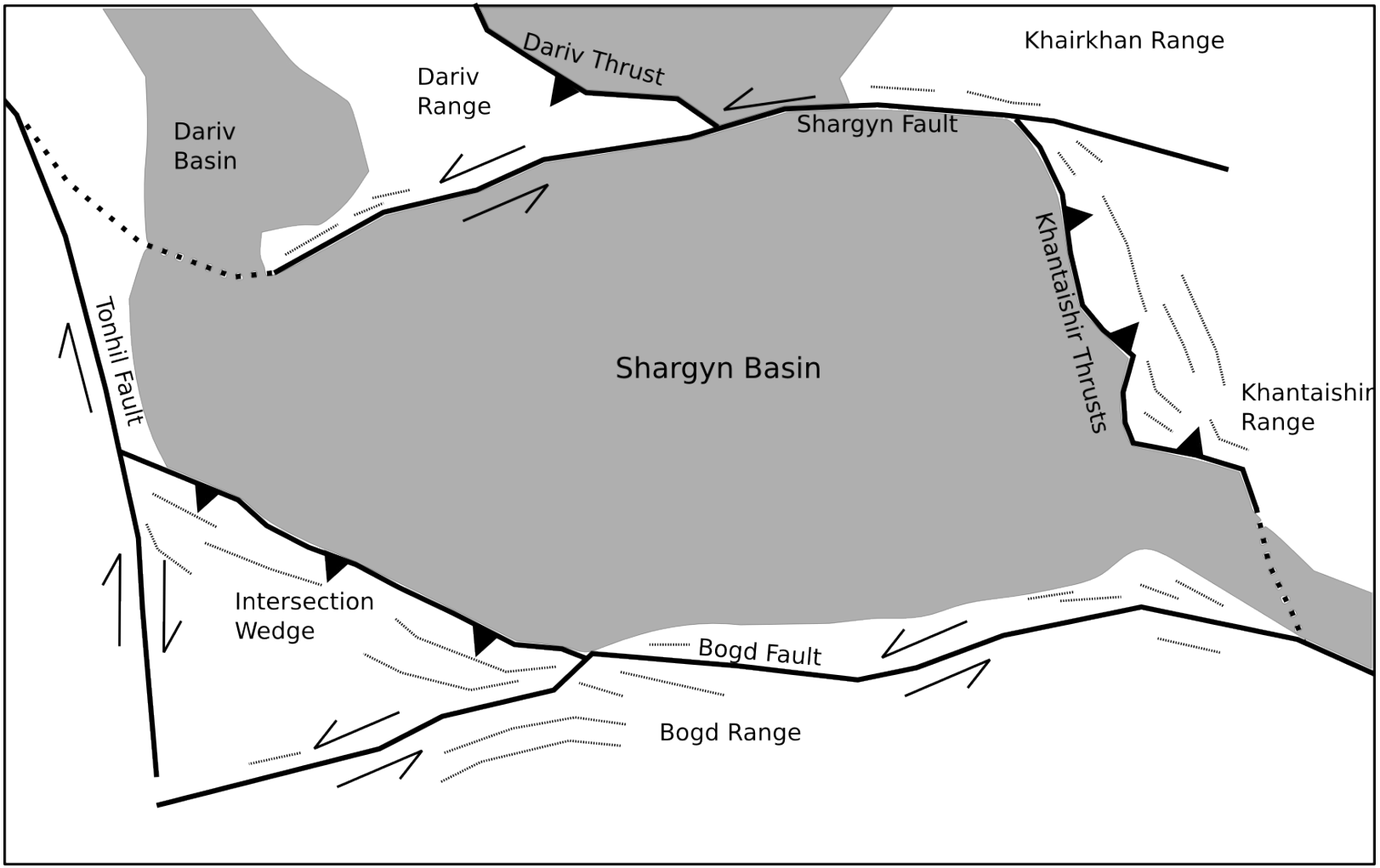
Two thrusts of different ages



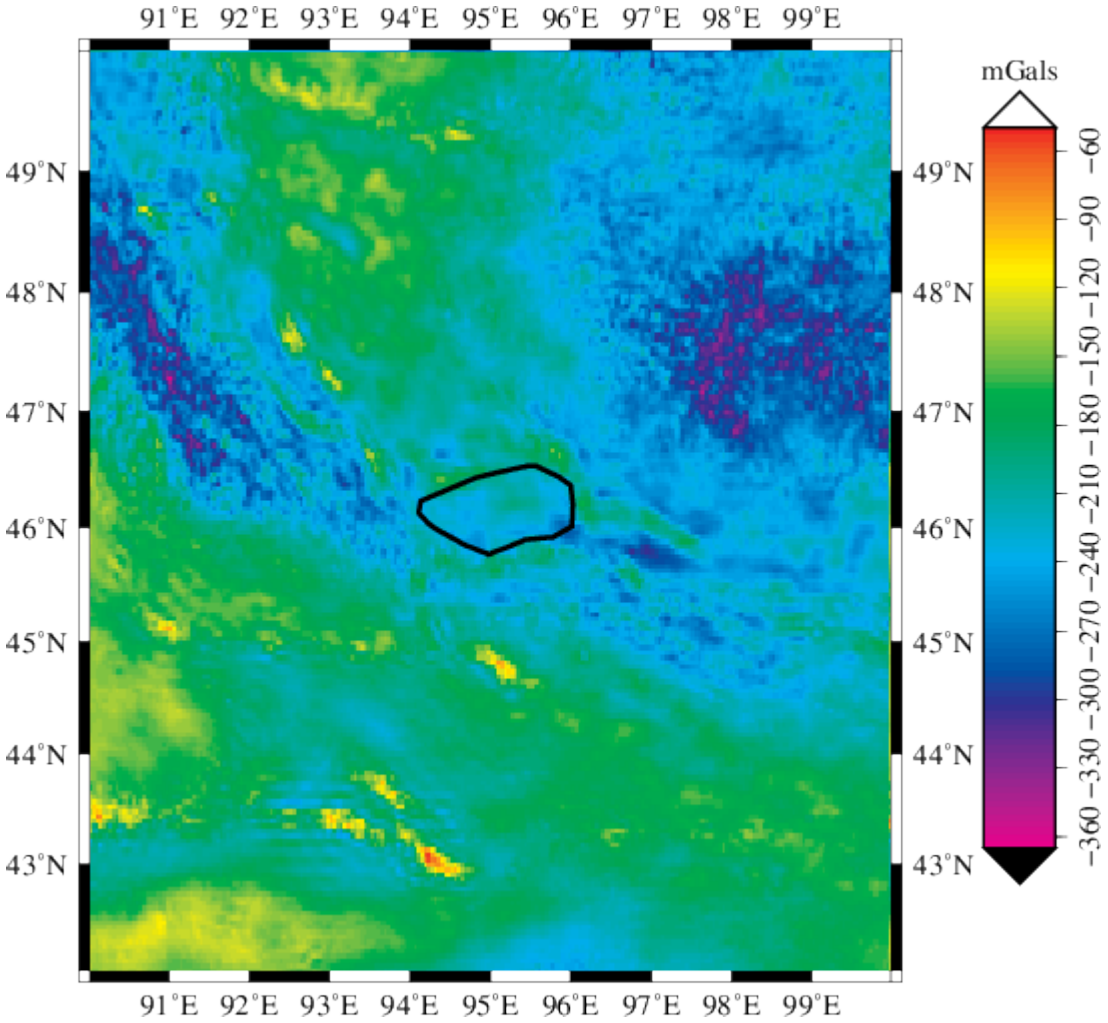
Thrust splay fault exposure



Lack of faulting shows that the Shargyn Basin is strong



Bouguer gravity anomalies show the Shargyn Basin is dense



Concluding remarks

- Faulting around the Shargyn Basin creates a:
  - Compressional stepover with motion stepping north from the Bogd Fault to the Khantaishir Thrusts and the Shargyn Fault.
- Faulting is controlled by pre-existing Paleozoic structures.
  - Foliation parallel, (esp. Main Mongolian Lineament)
- Faulting is controlled by a unique crustal block
  - Indicated by lack of faulting and density anomaly