

# STRIKE-SLIP FAULTS AND FABRIC VARIATION: IMPLICATIONS FOR STRUCTURAL AND TECTONIC DEVELOPMENT, NORTHERN IRON MOUNTAINS, SOUTHWEST VIRGINIA

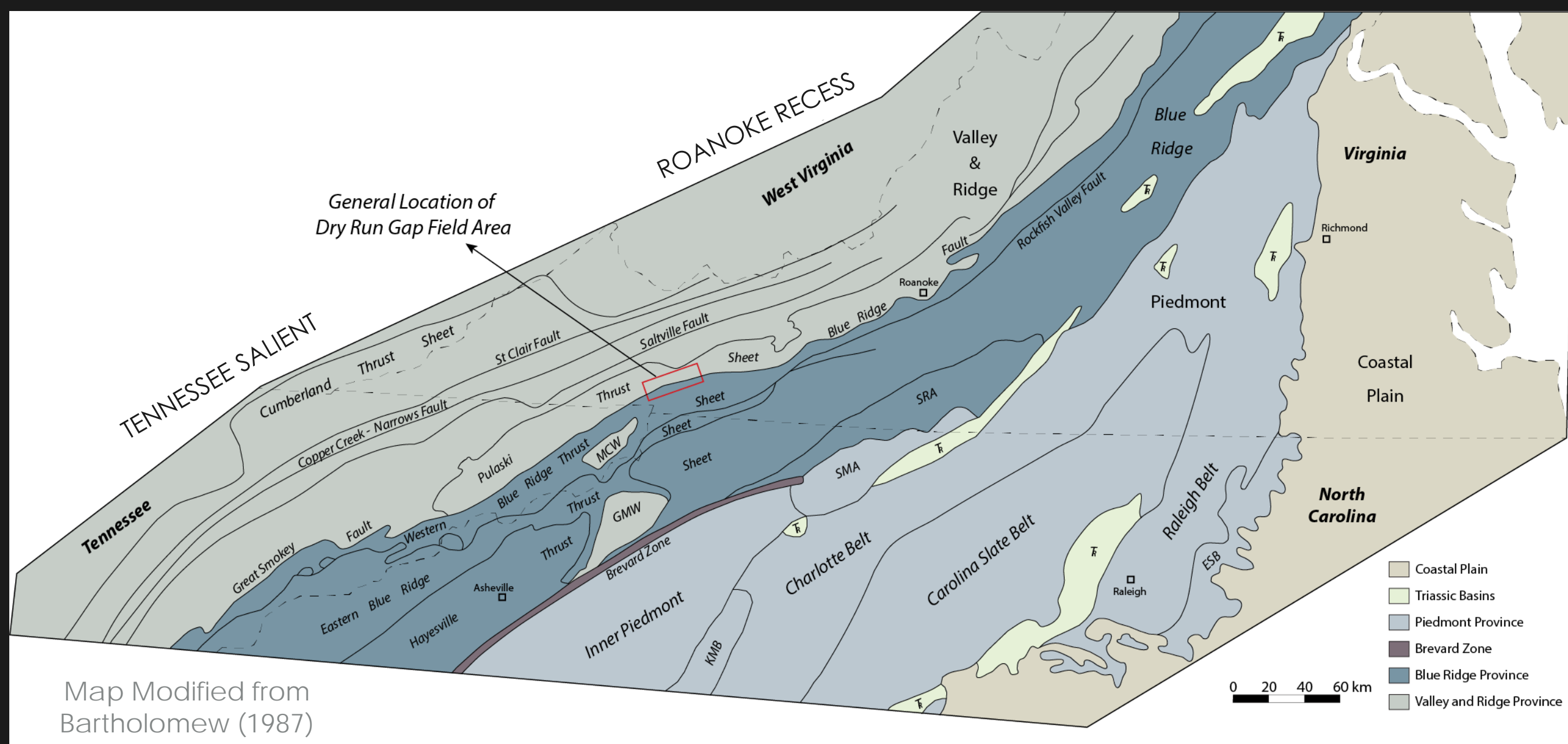
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# INTRODUCTION

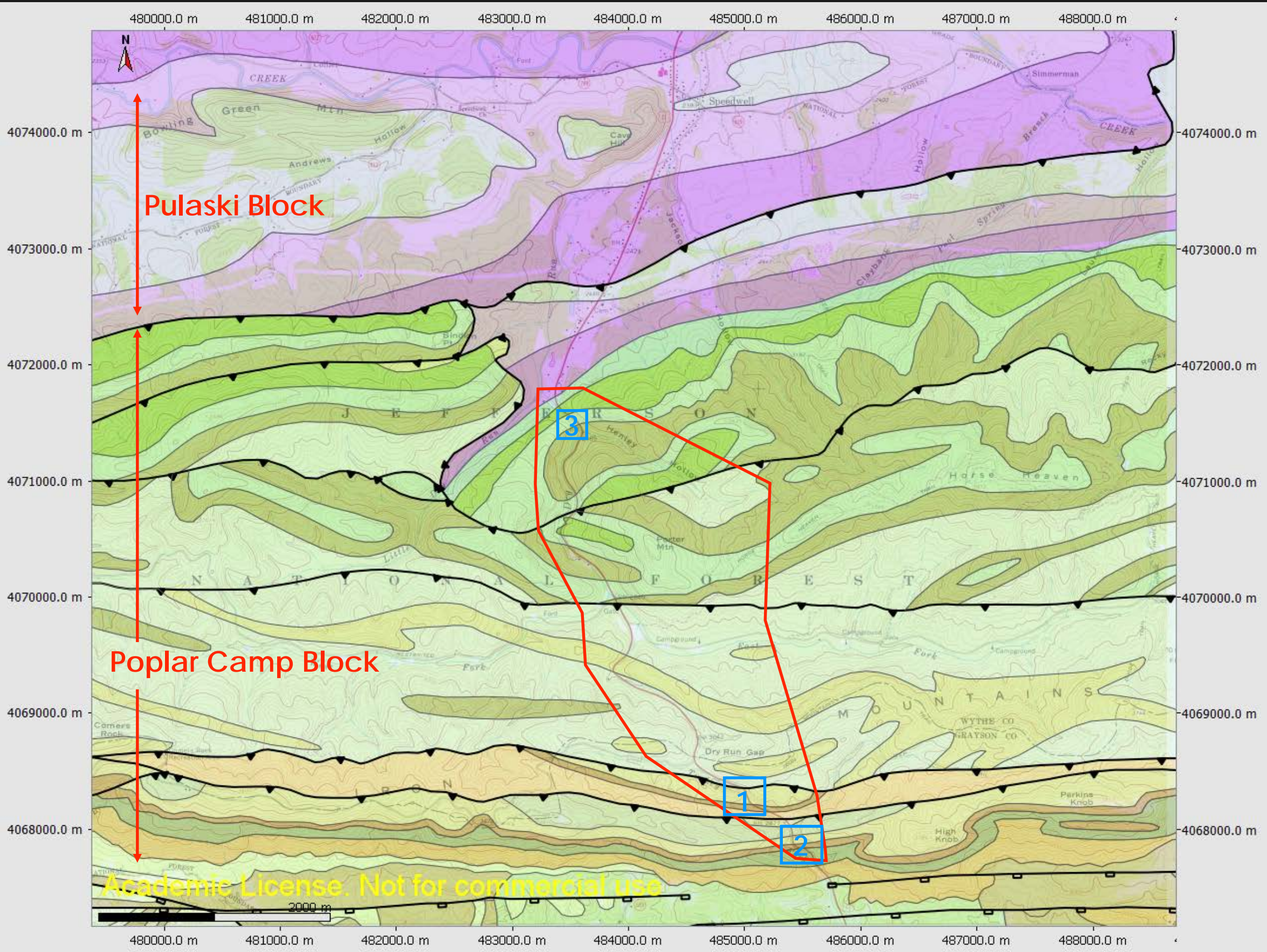
- Small- to mesoscale strike-slip faults present in Dry Run Gap (DRG)
- Variation in cleavage orientation





# NORTHERN IRON MOUNTAINS - DRY RUN GAP

Map Modified from  
Stose and Stose (1957)



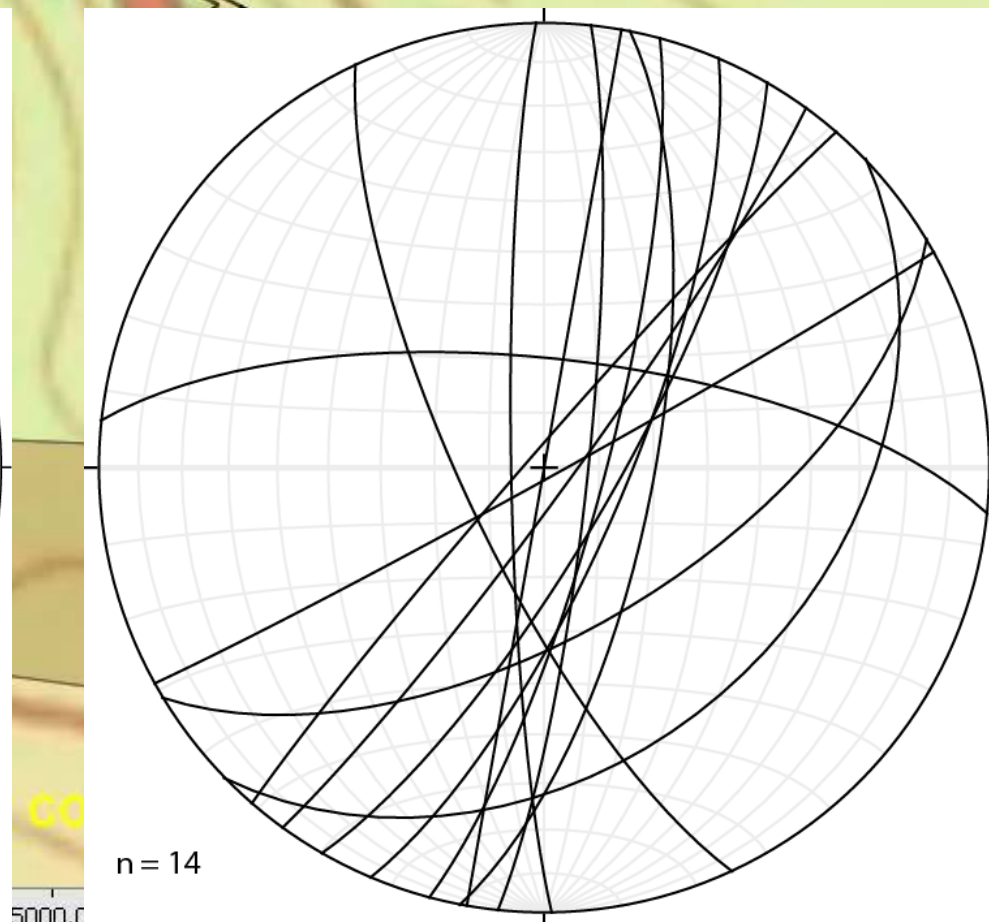
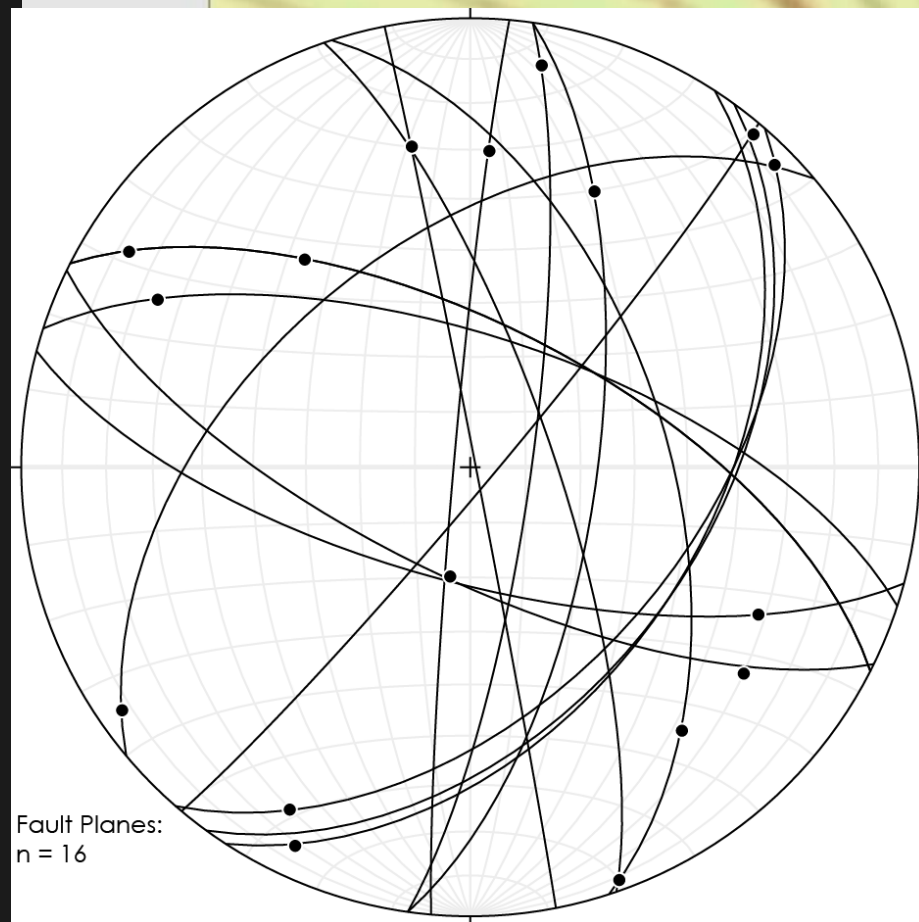


# CLEAVAGE VARIATION





# STRIKE-SLIP FAULTS





# STRIKE-SLIP AND NORMAL FAULTS





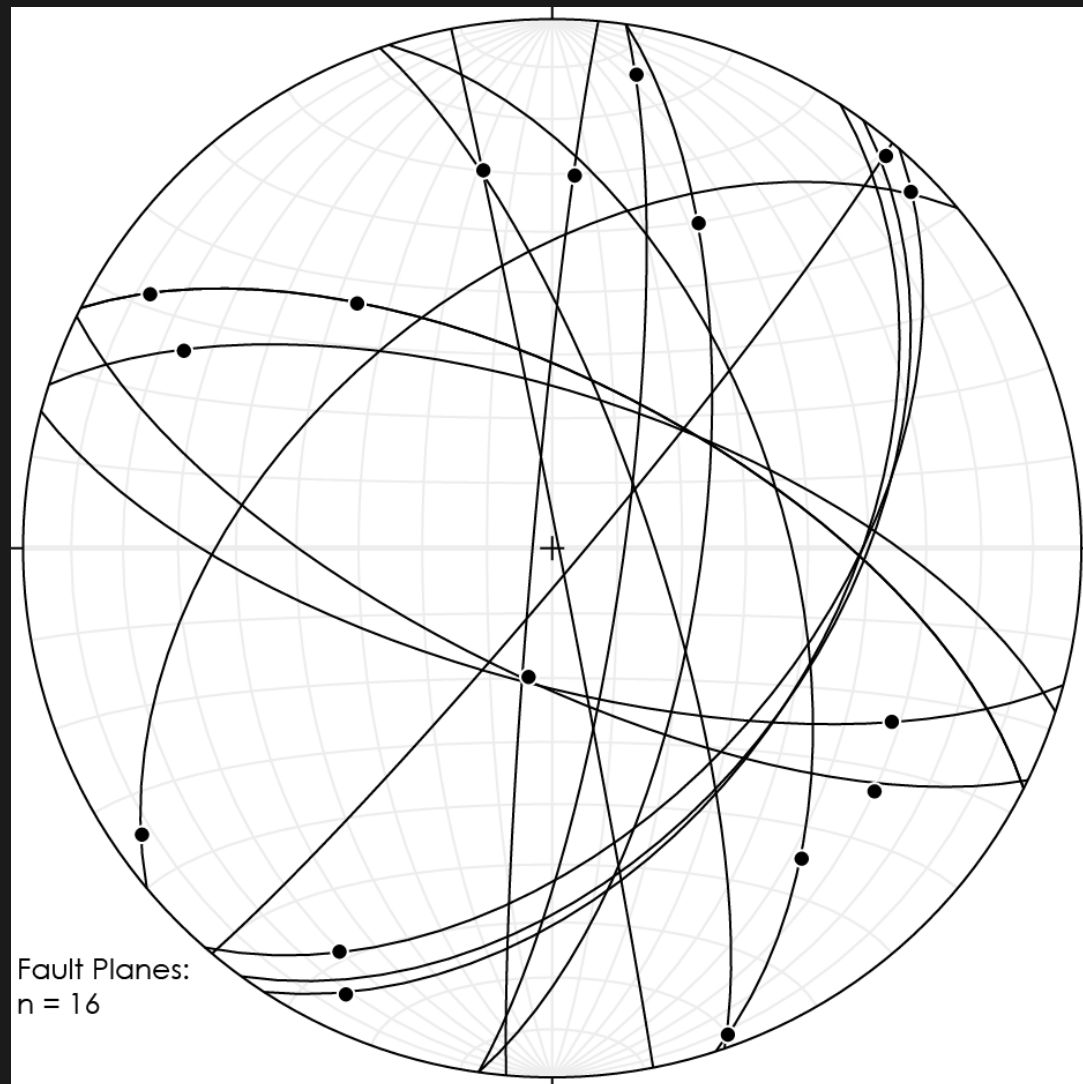
# STRIKE-SLIP AND NORMAL FAULTS



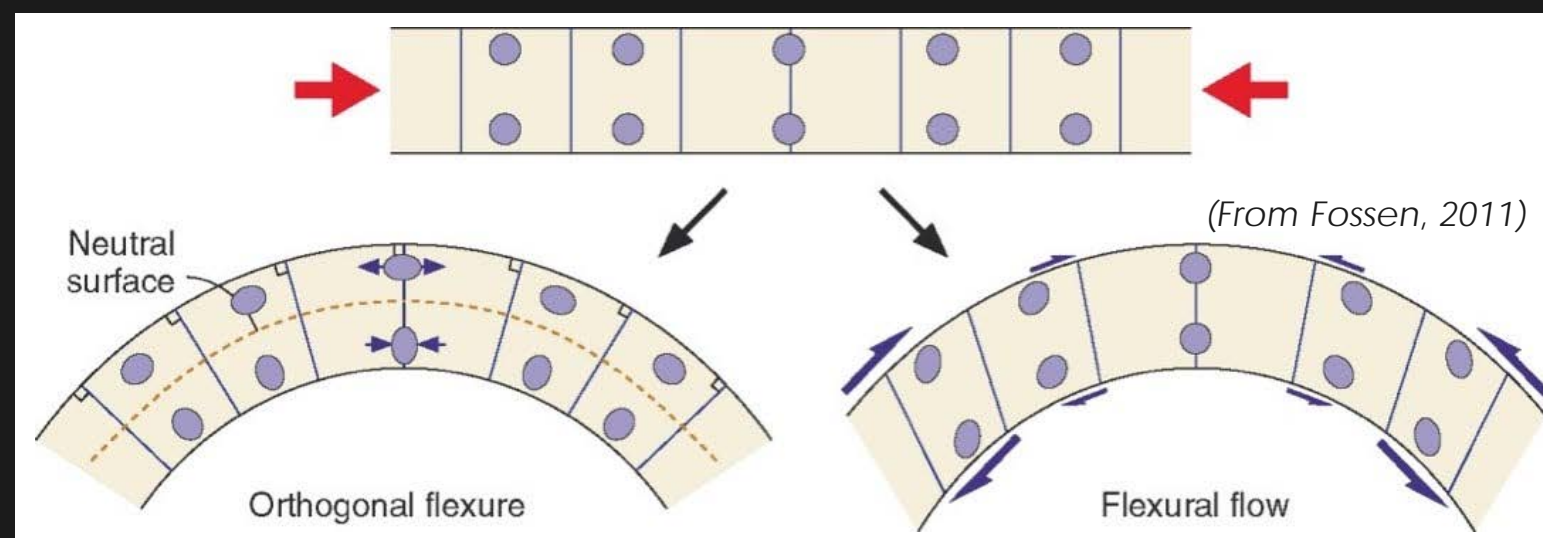
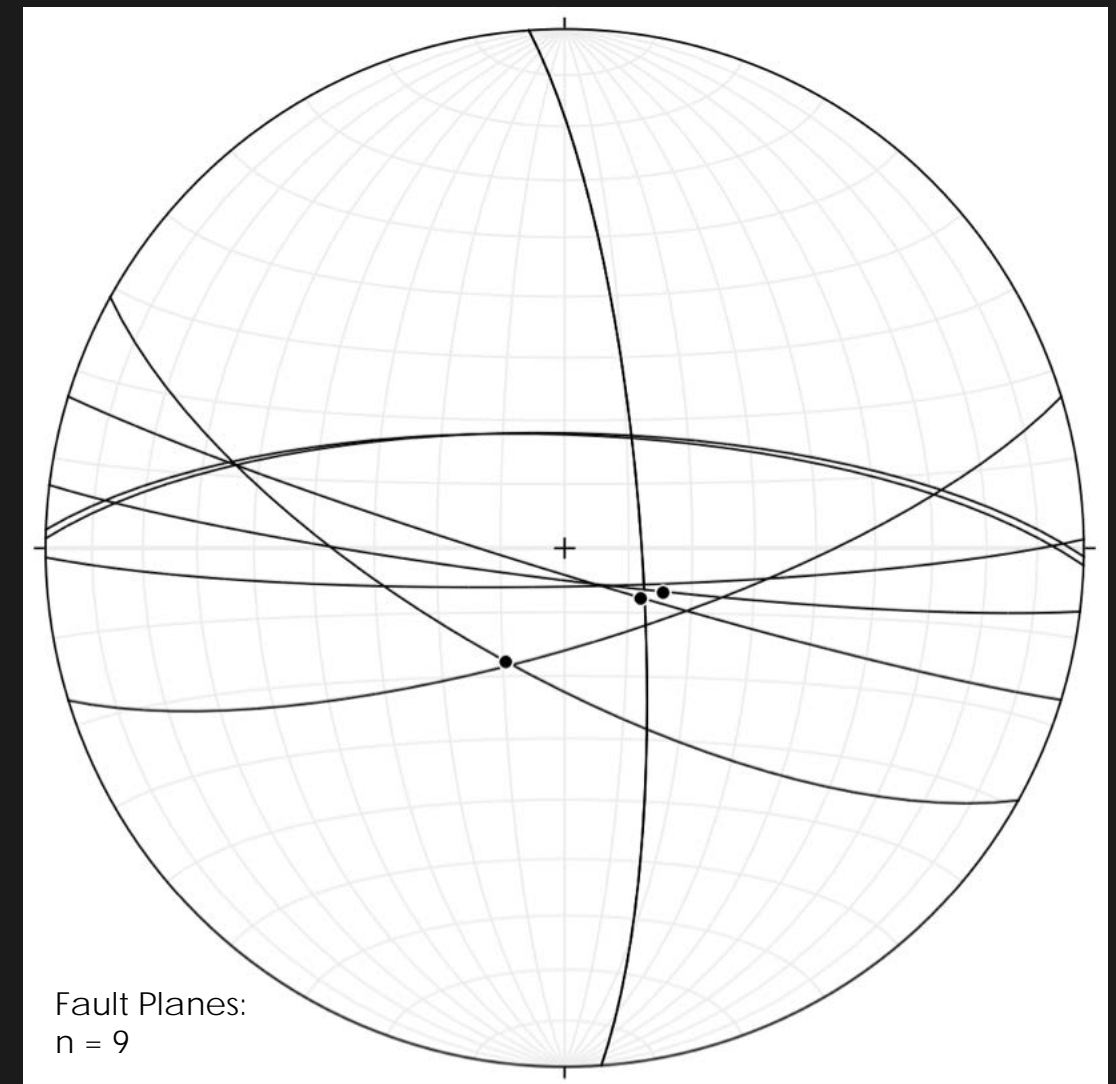


# STRIKE-SLIP AND NORMAL FAULTS

## Strike-slip Faults

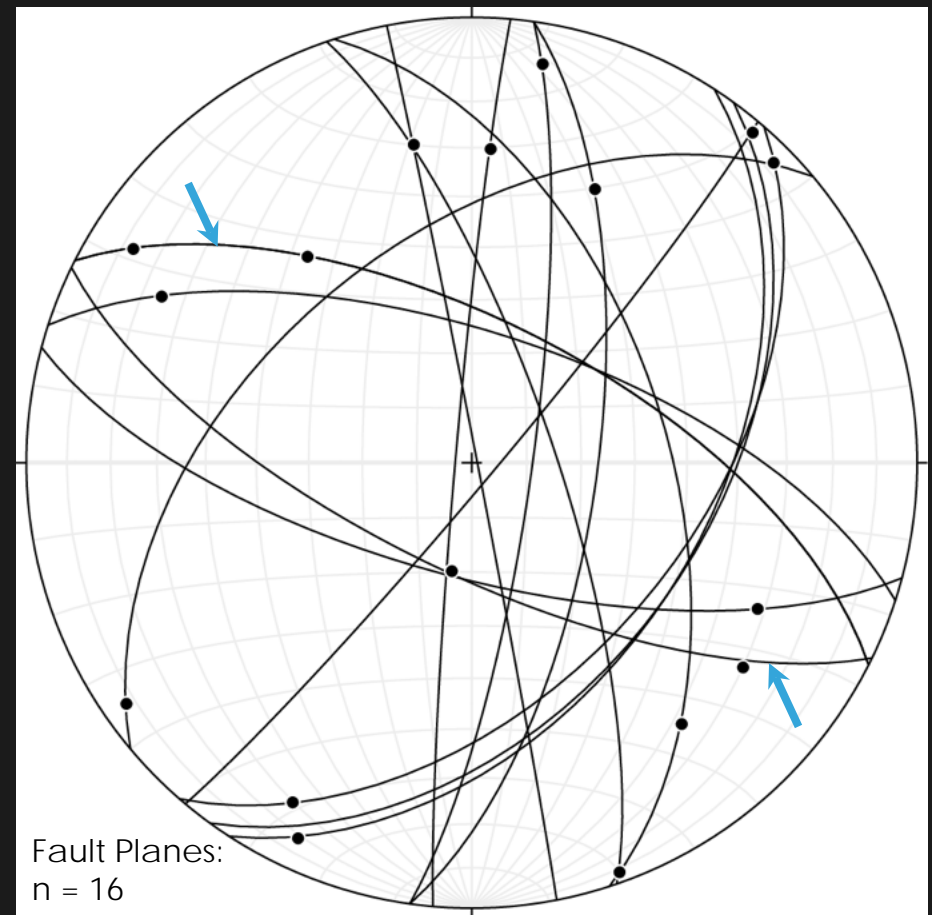


## Normal Faults





# STRIKE-SLIP OVERPRINT

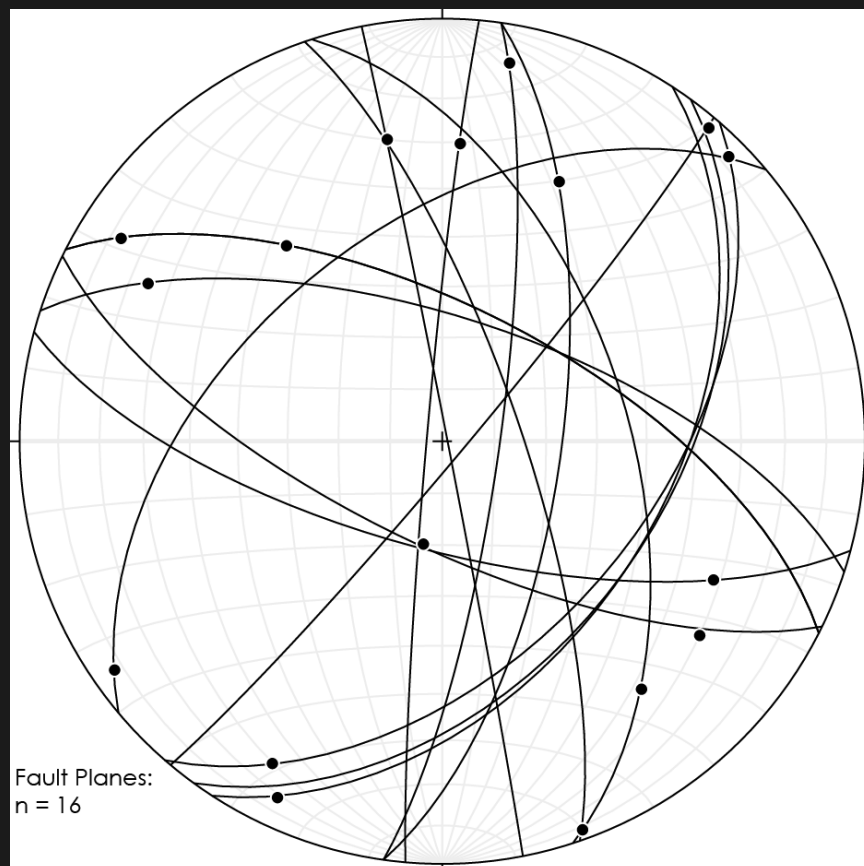




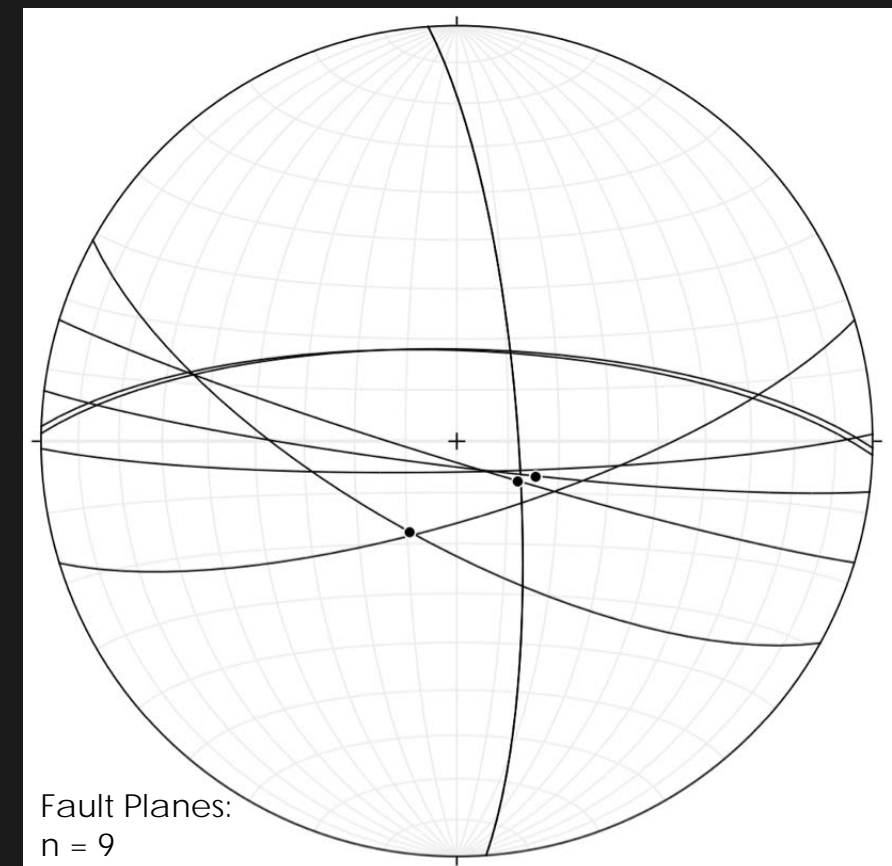
# STRUCTURAL PROGRESSION IMPLICATIONS

- Cleavage variation during convergence
- Initial N-NNE Sinistral and Dextral faults
- Cut by normal faults - ~W-WNW trending
  - Syn-Folding? - Orthogonal Flexure?
- Late Strike-slip faults - WNW Sinistral and Dextral
  - Syn- to Post-normal fault formation?

## Strike-slip Faults

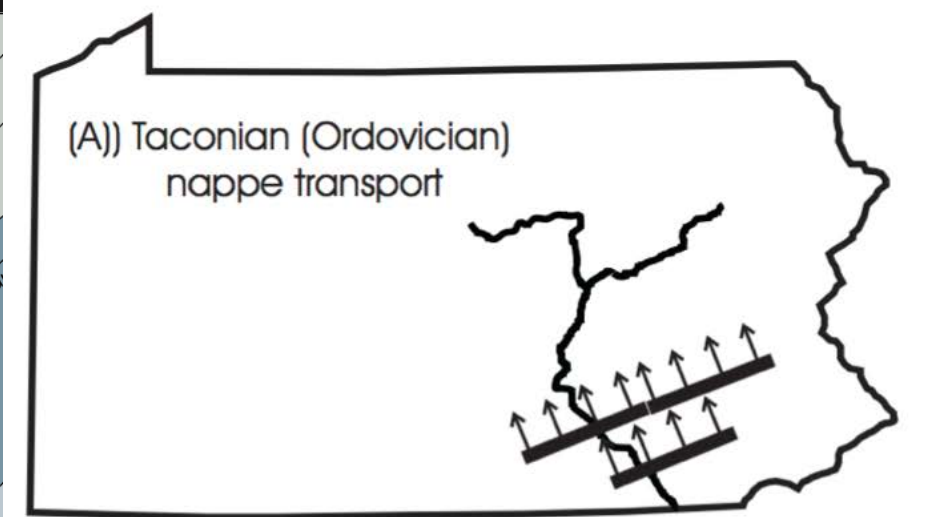
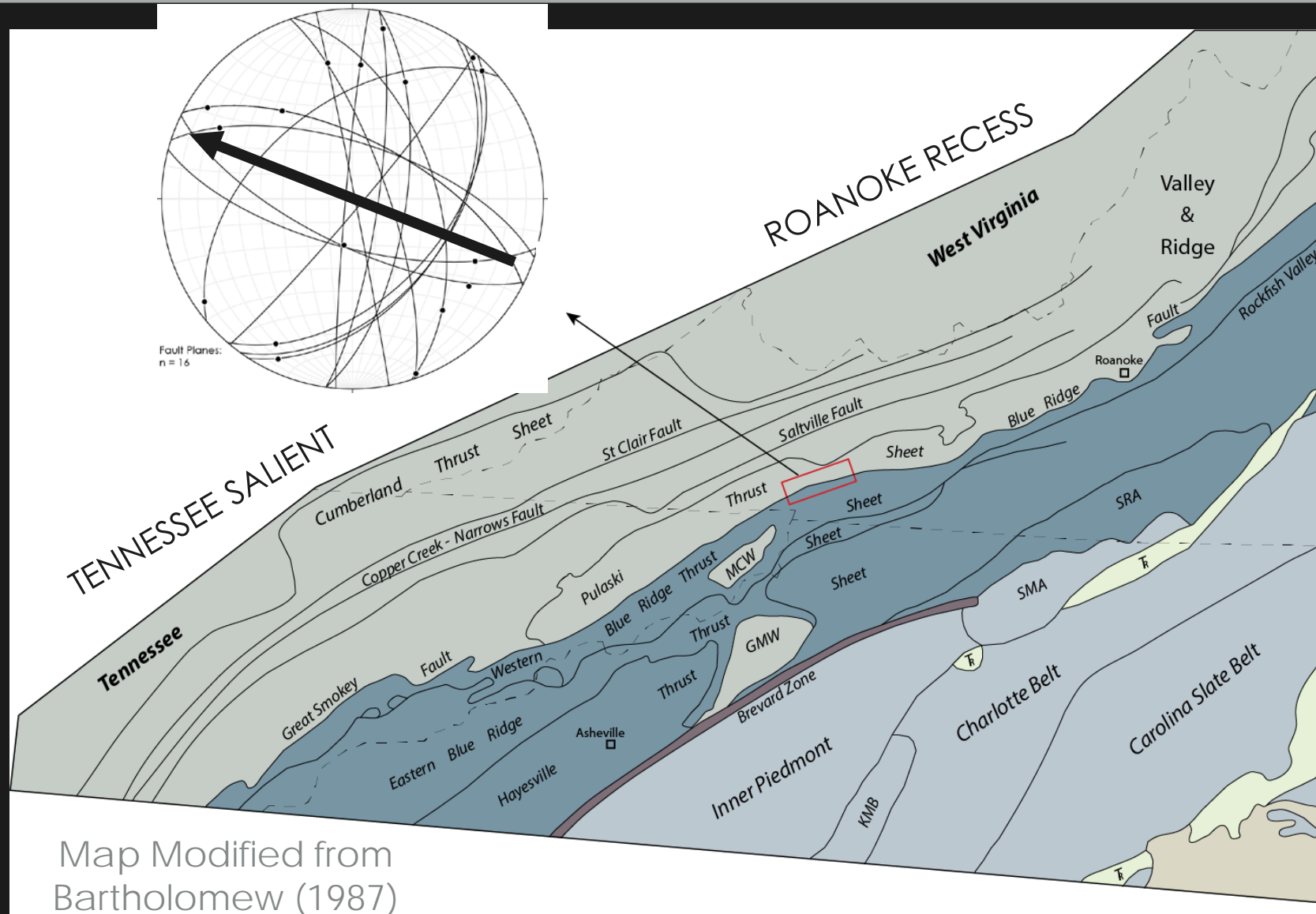


## Normal Faults

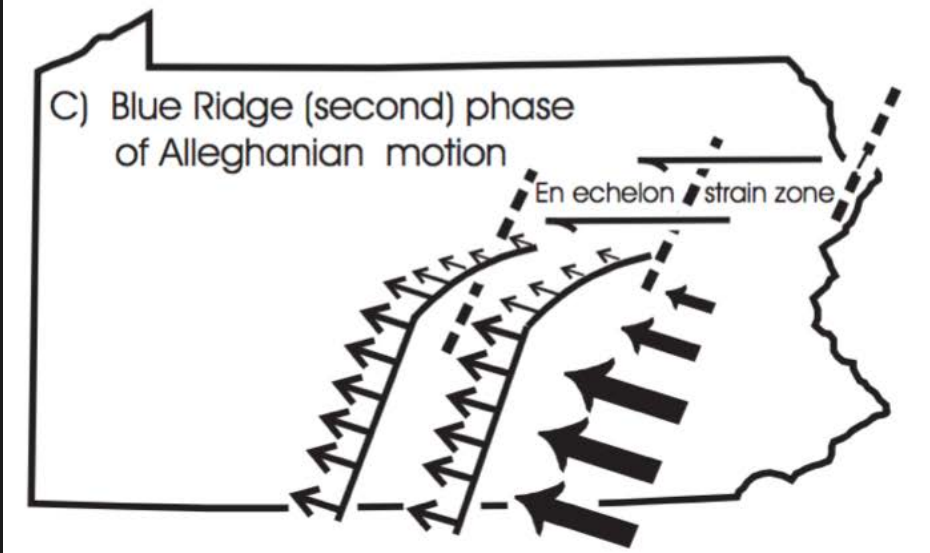
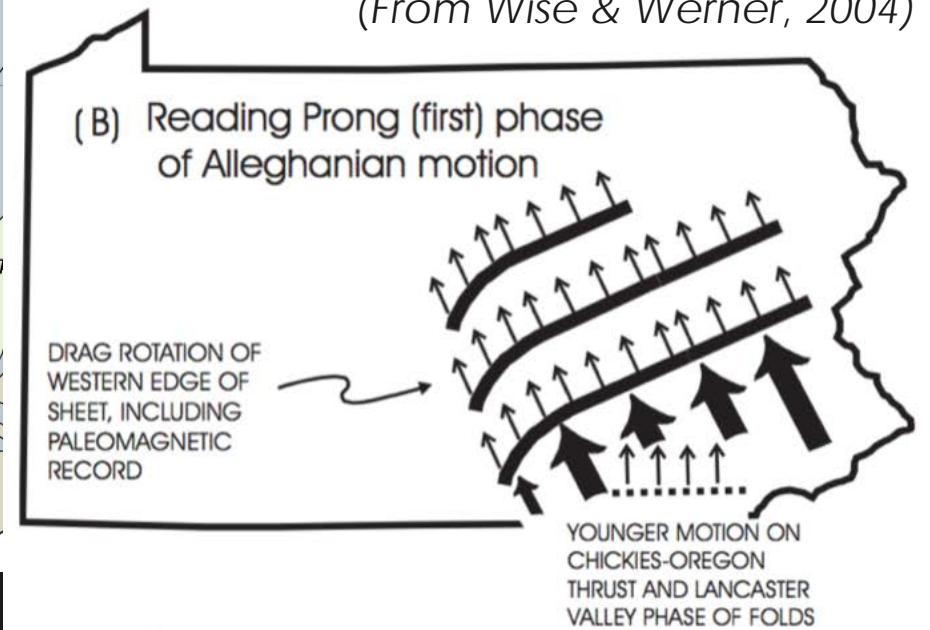




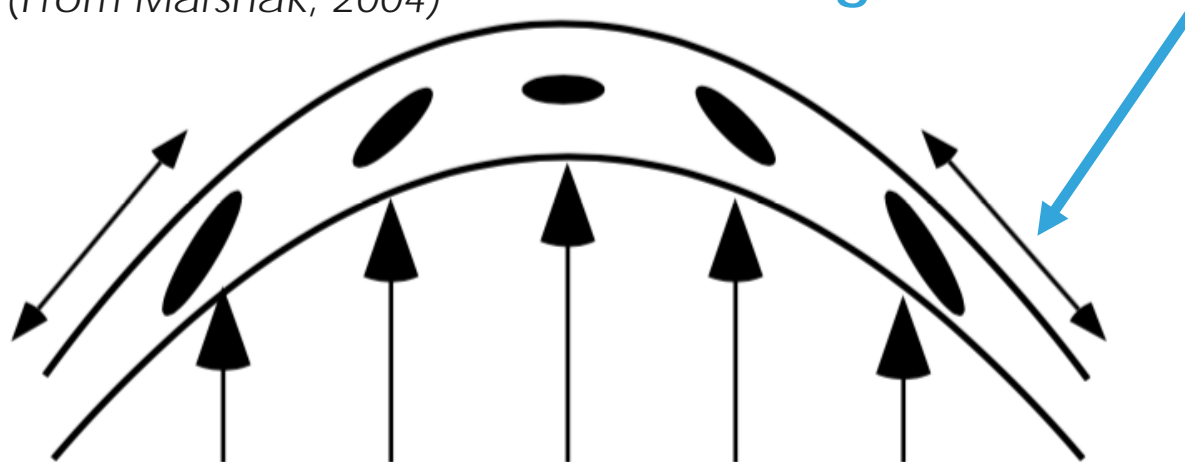
# TECTONIC IMPLICATIONS



(From Wise & Werner, 2004)



(From Marshak, 2004) DRG - Tangential Extension?





# CONCLUSIONS

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- Cleavage orientation variation implies progressive structural changes during imbrication
- DRG strike-slip faults indicate a more detailed structural progression
  - Suggest a change in tectonic transport direction
  - ~N-NNE to WNW
  - Possibly accommodating convergence change with salient interaction