

Provenance implications of new U-Pb detrital zircon data from Cambrian passive margin strata of northern Nevada

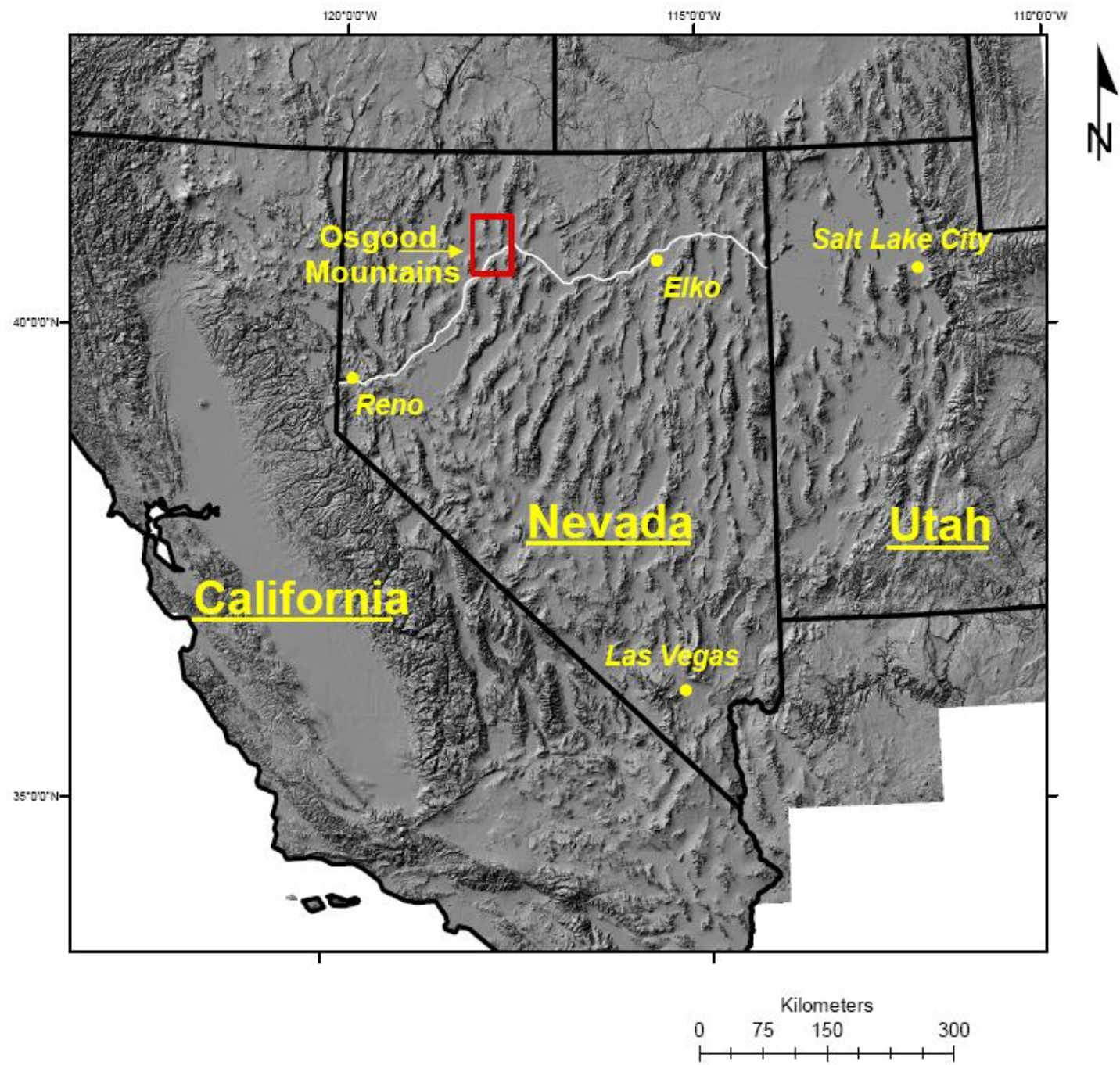
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William R. Dickinson**, and James H. Trexler, Jr.*

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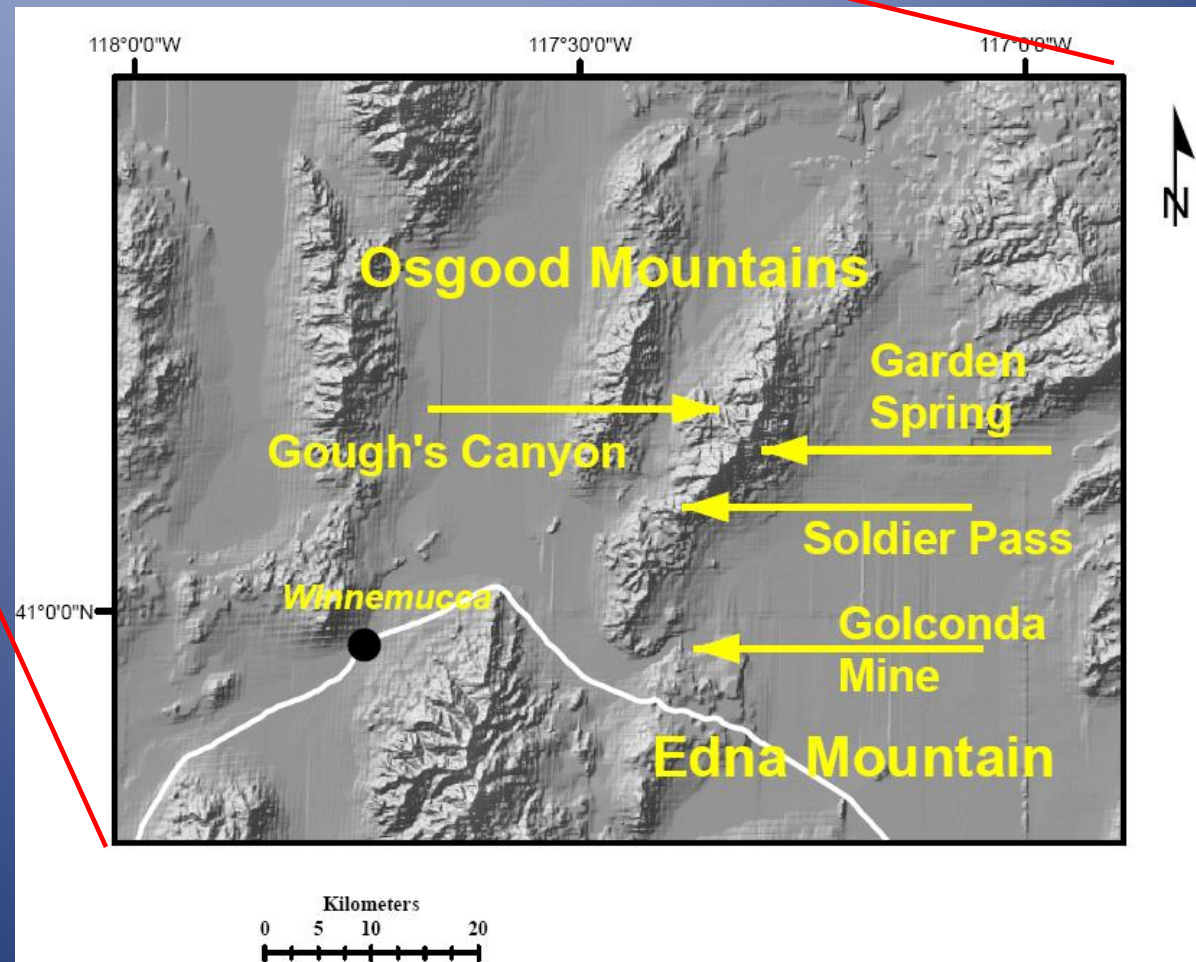
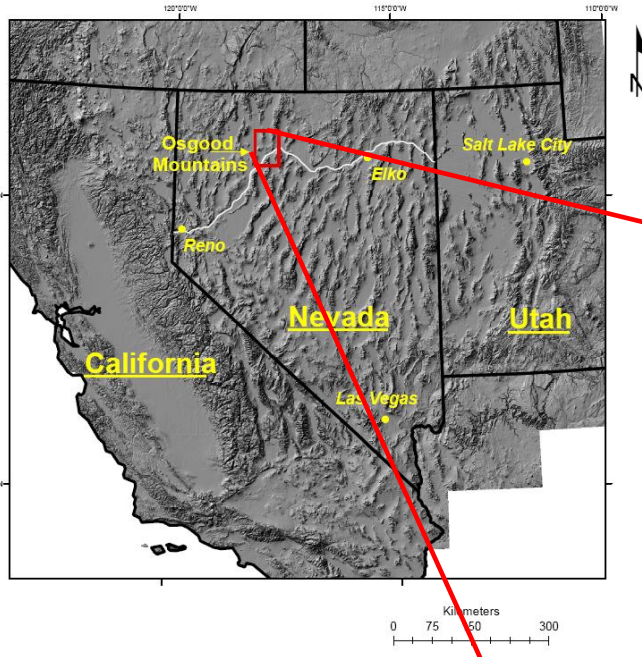
Outline

- Study
- Results: north-central Nevada
- Regional correlation – regional provenance change
- Why the change in provenance?
- Future work

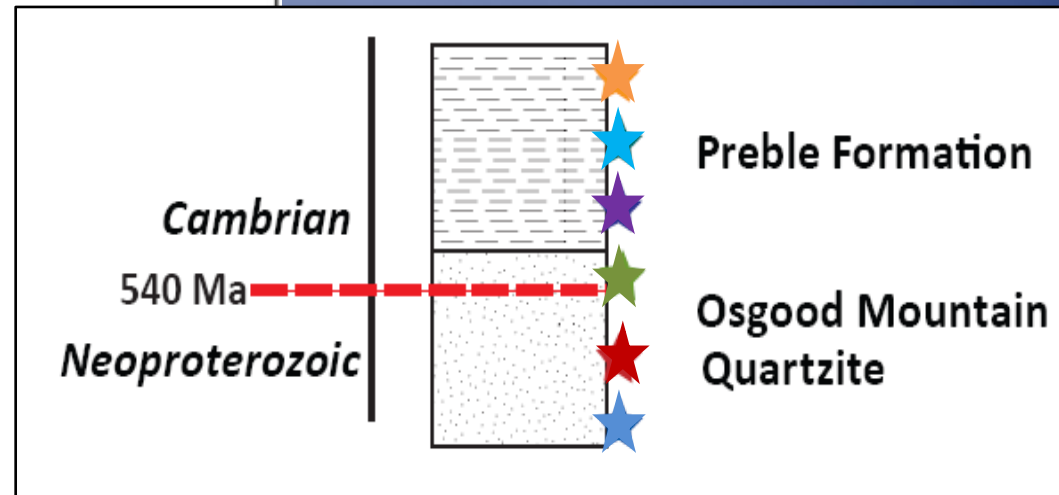
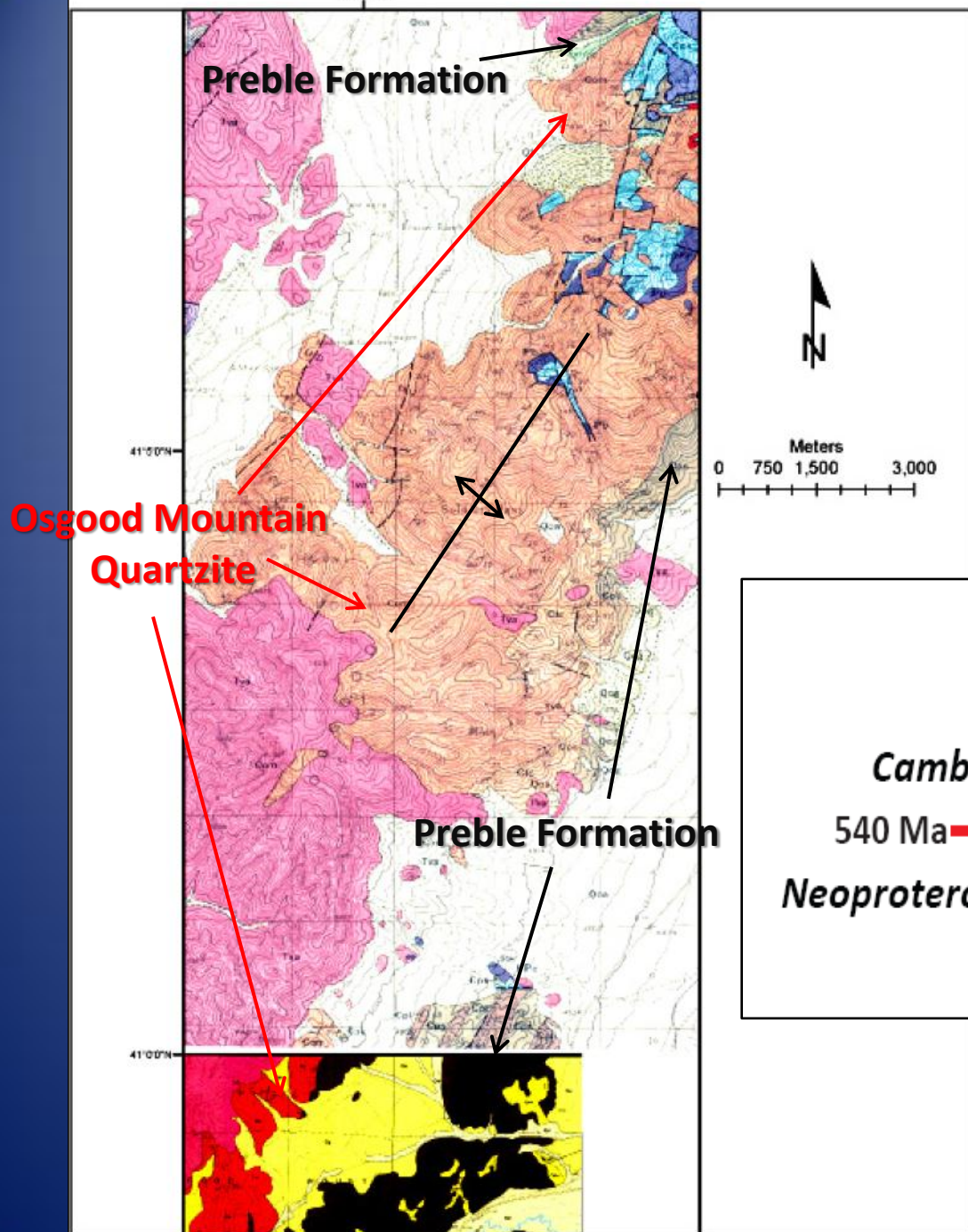




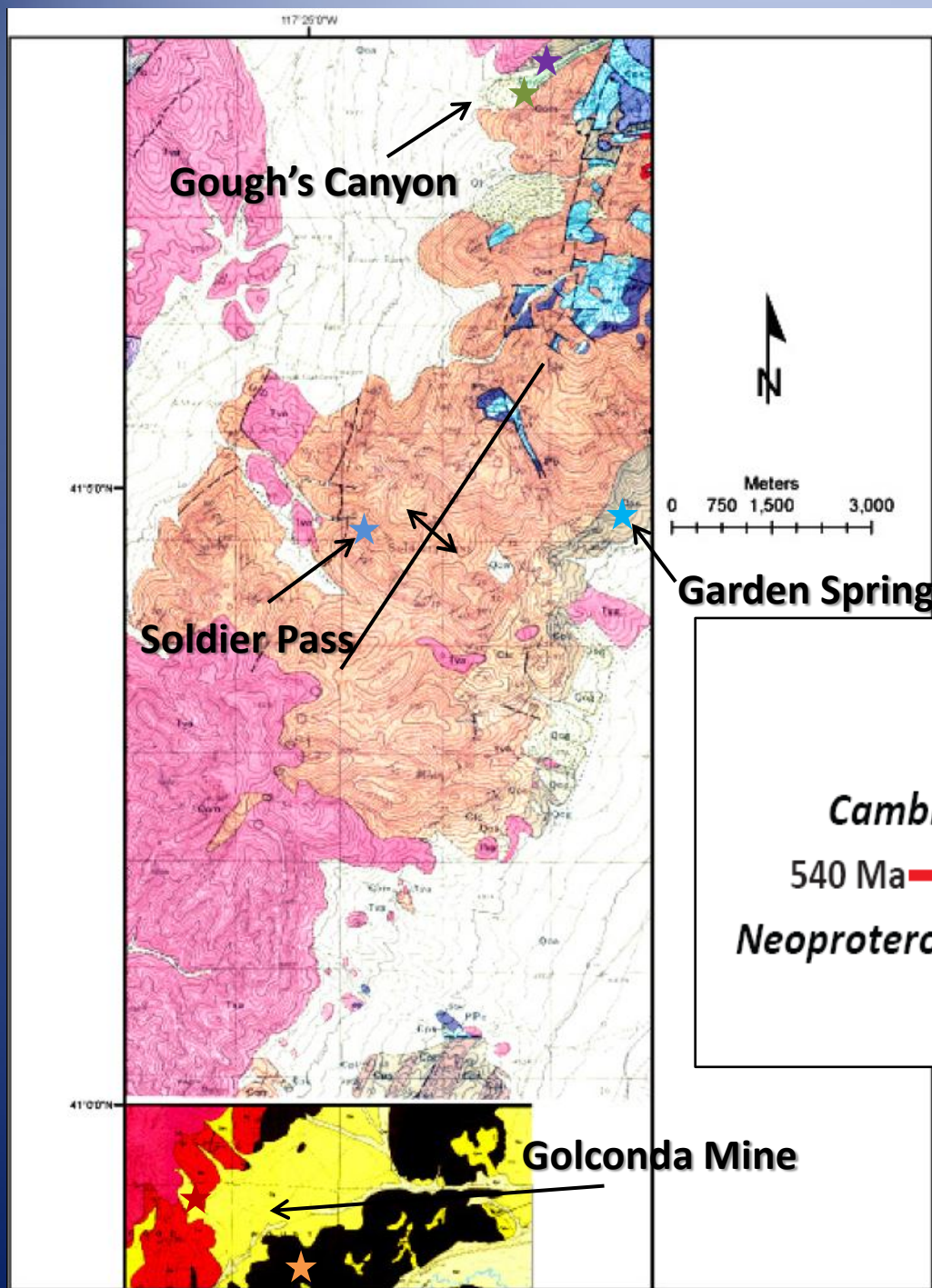
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(Hotz and Willden, 1961)



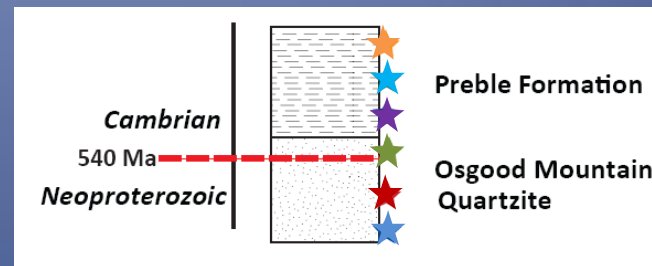
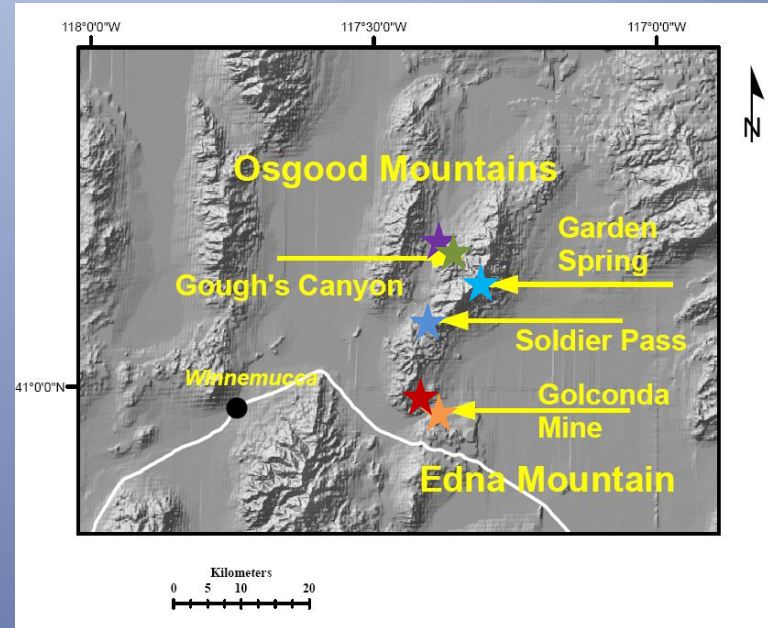
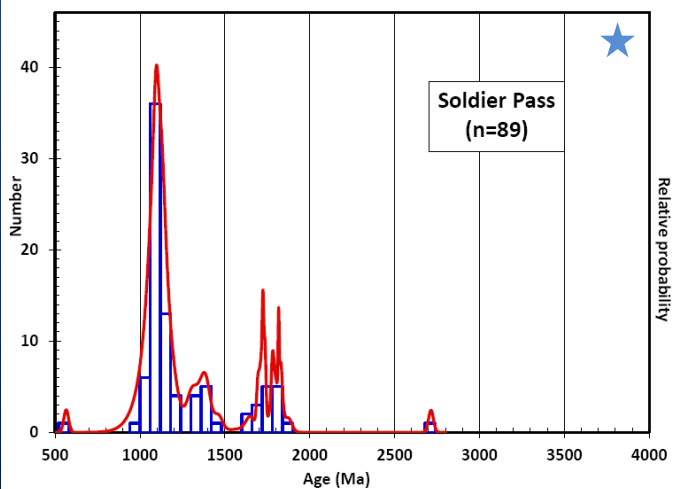
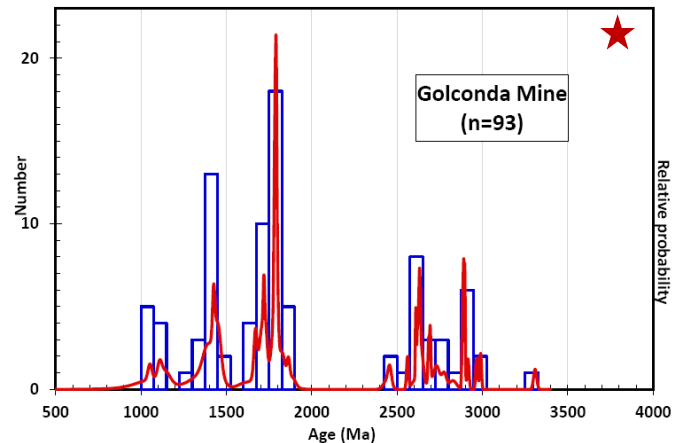
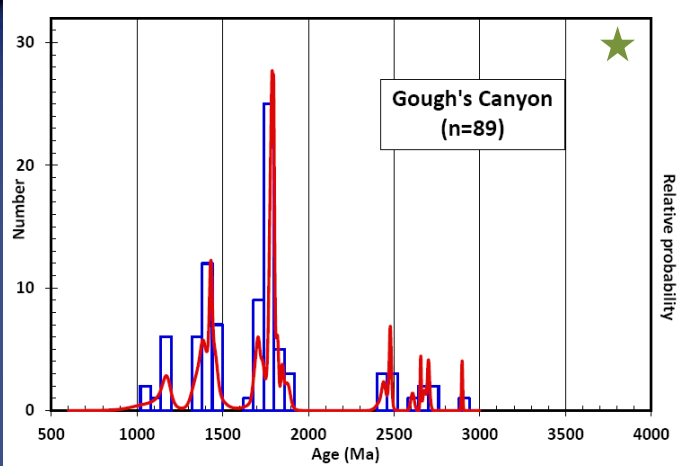
(Erickson and Marsh, 1974)



(Hotz and Willden, 1961)

(Erickson and Marsh, 1974)

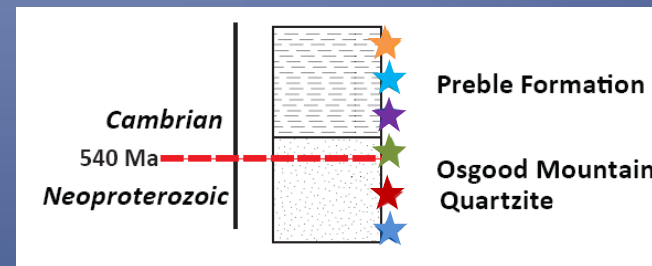
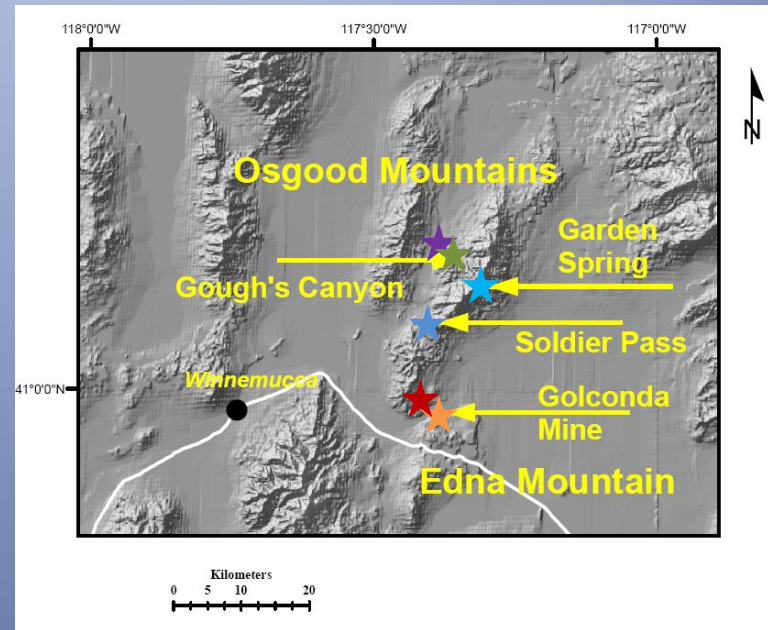
Osgood Mountain Quartzite



Reported U-Pb ages are concordant ages
from LA-ICP-MS at
University of Arizona LaserChron Center

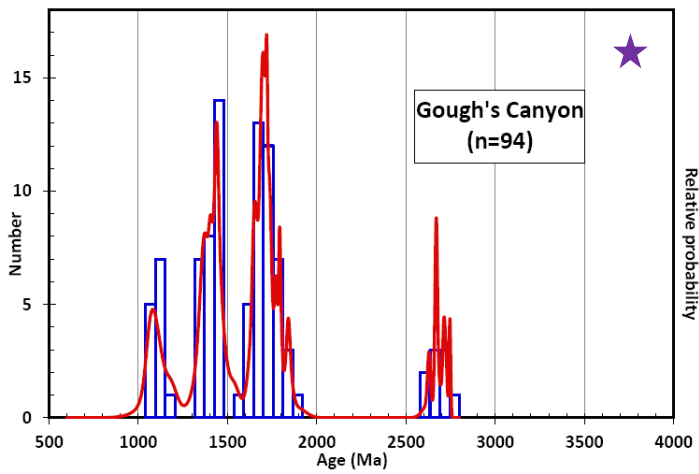
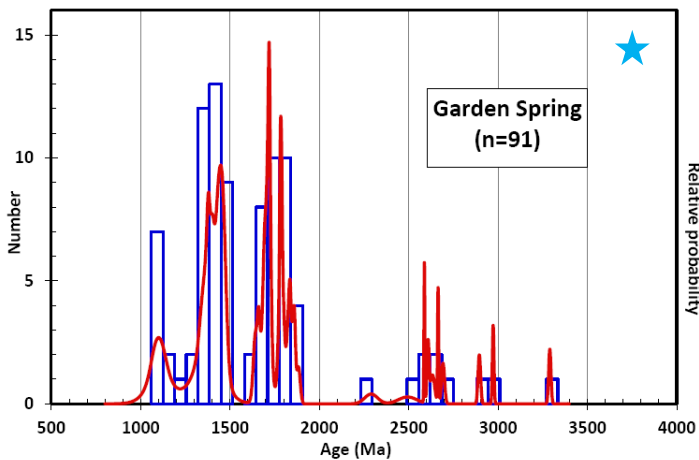
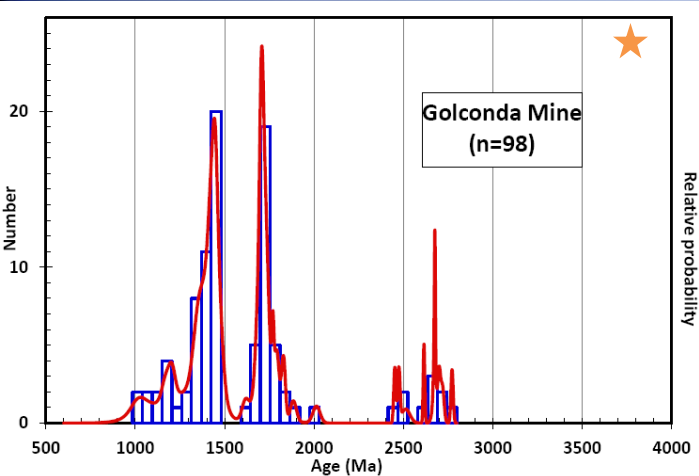
(Relative probability graphs)

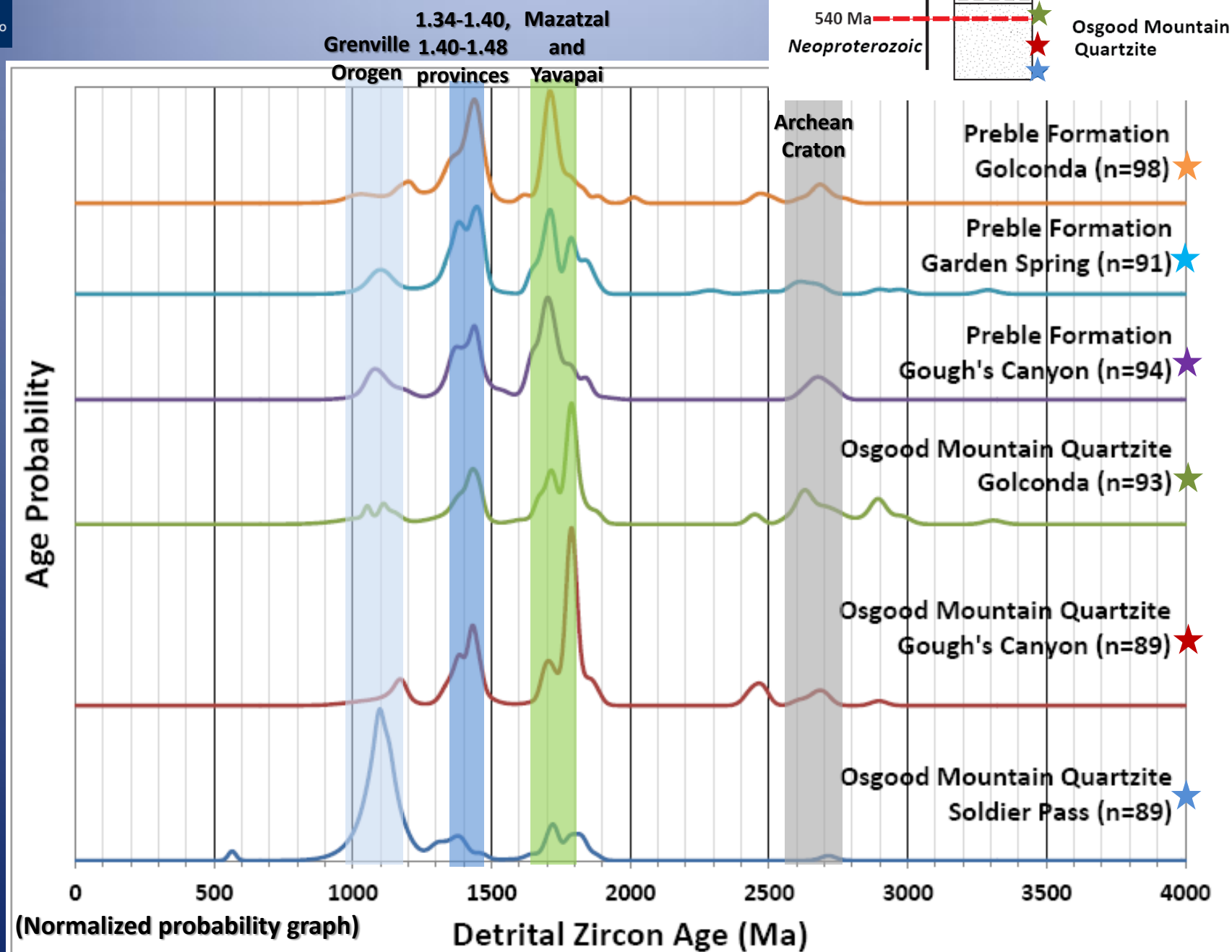
Preble Formation



Reported U-Pb ages are concordant ages
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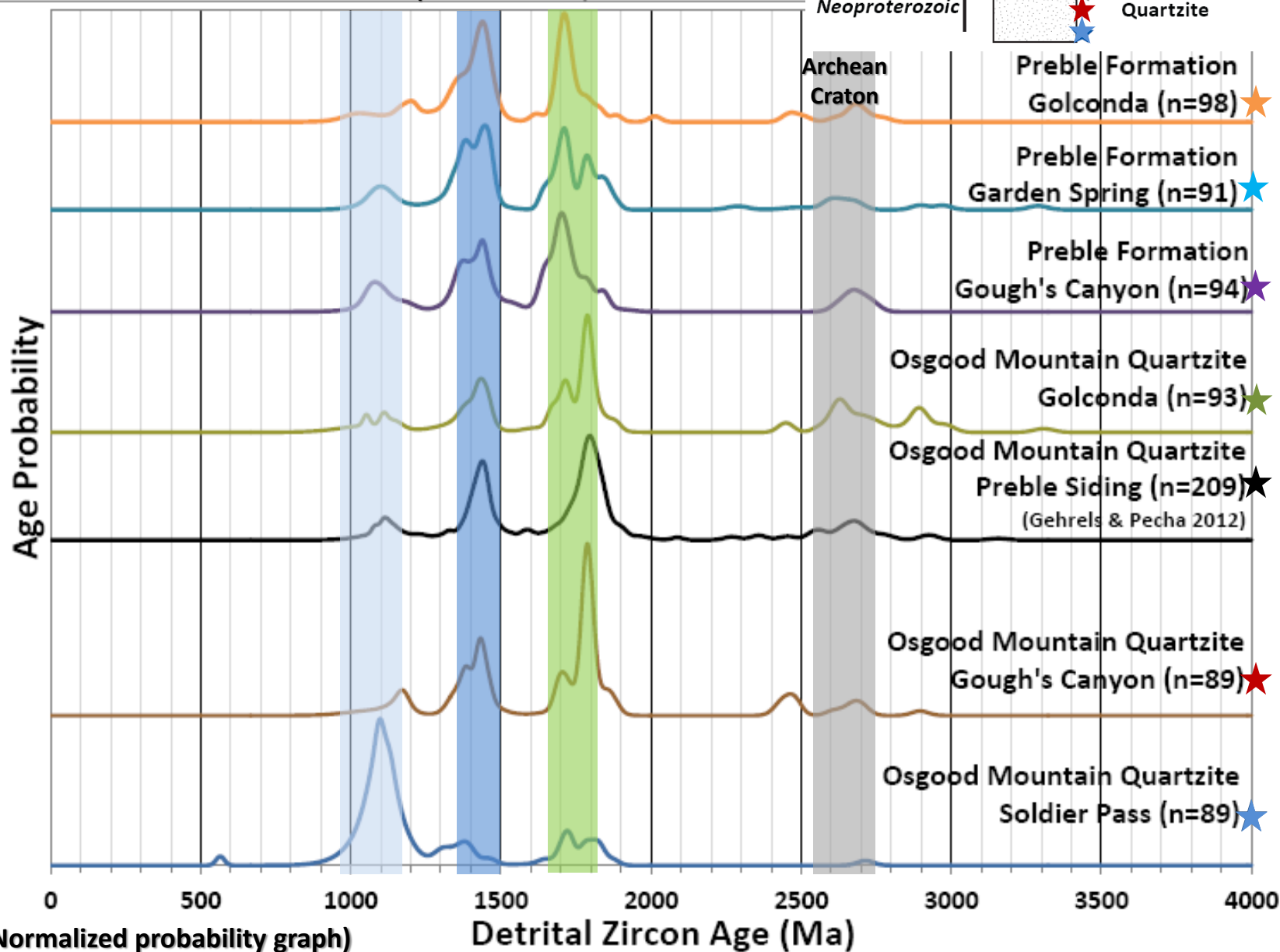
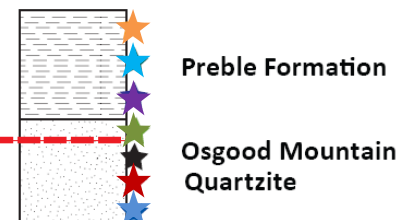
(Relative probability graphs)

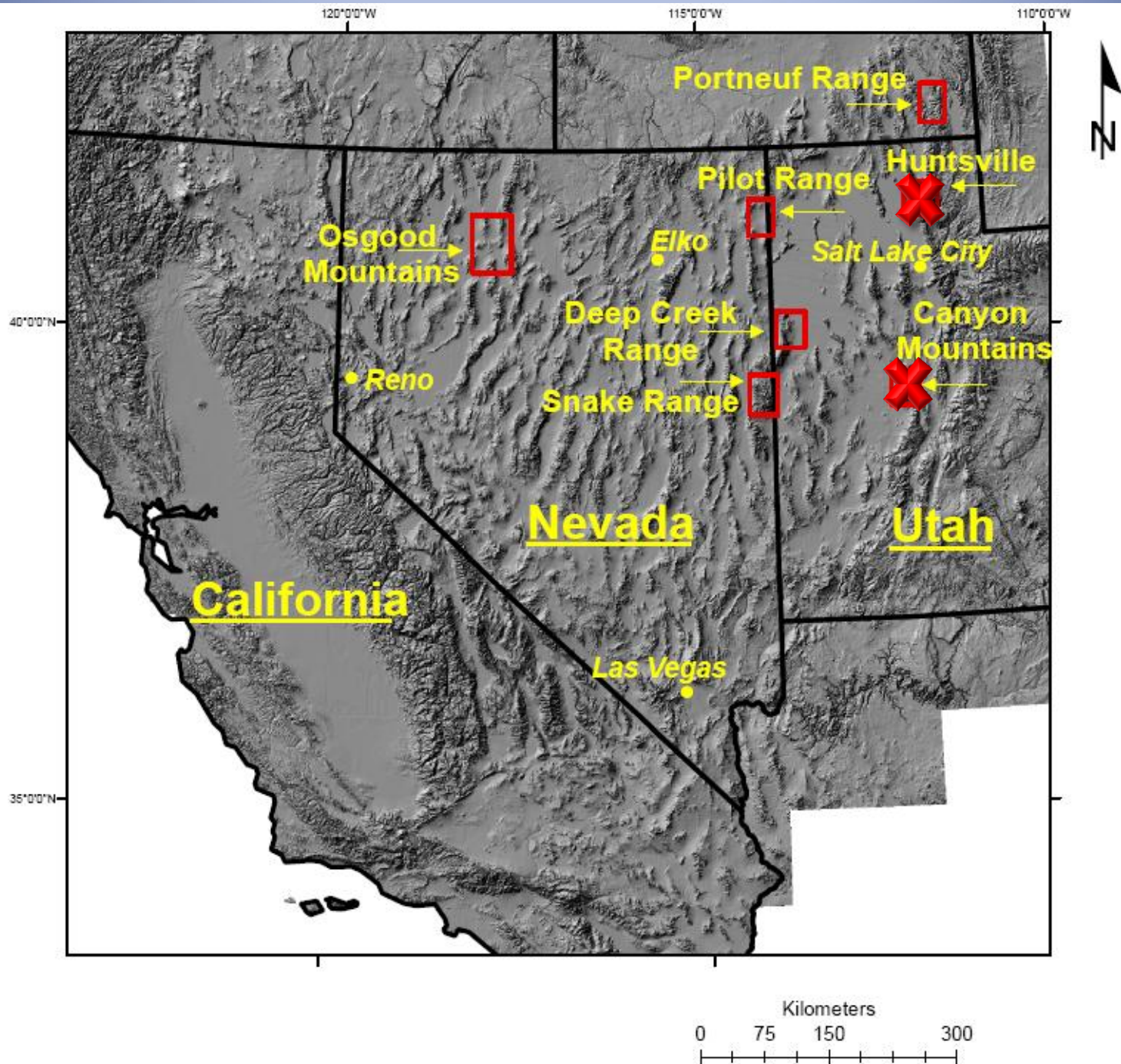


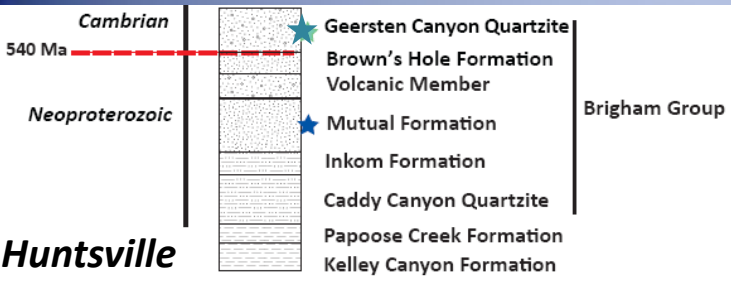


1.34-1.40, Mazatzal
Grenville 1.40-1.48 and
Orogen provinces Yavapai

Cambrian
540 Ma
Neoproterozoic

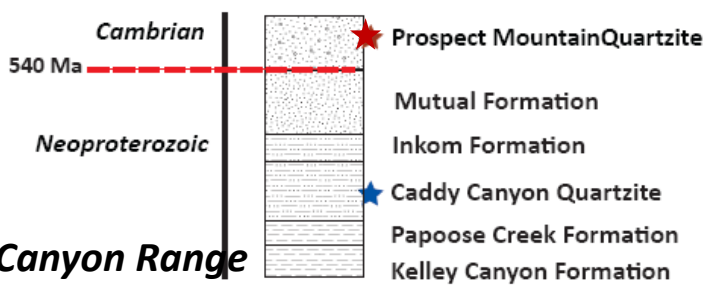
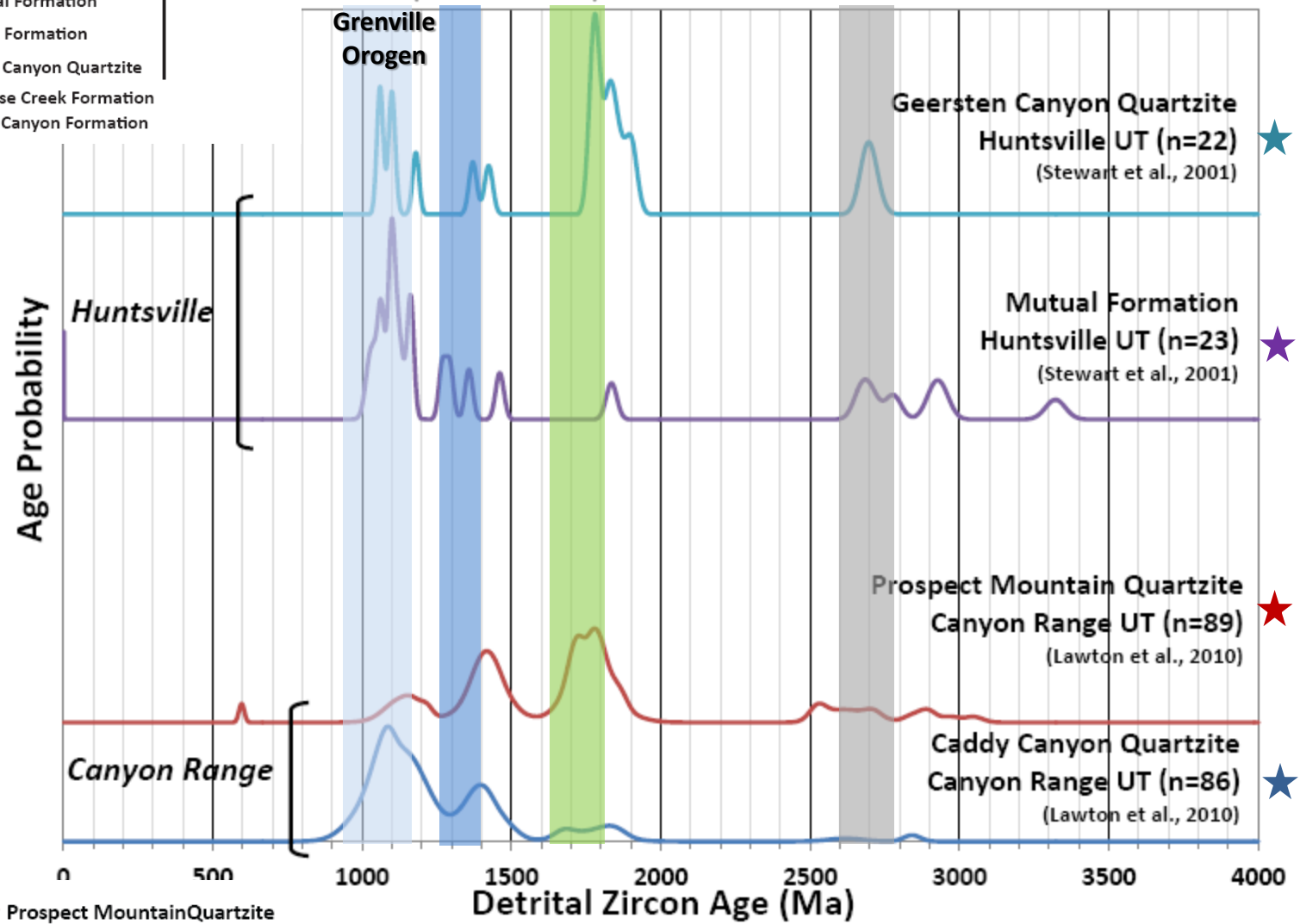




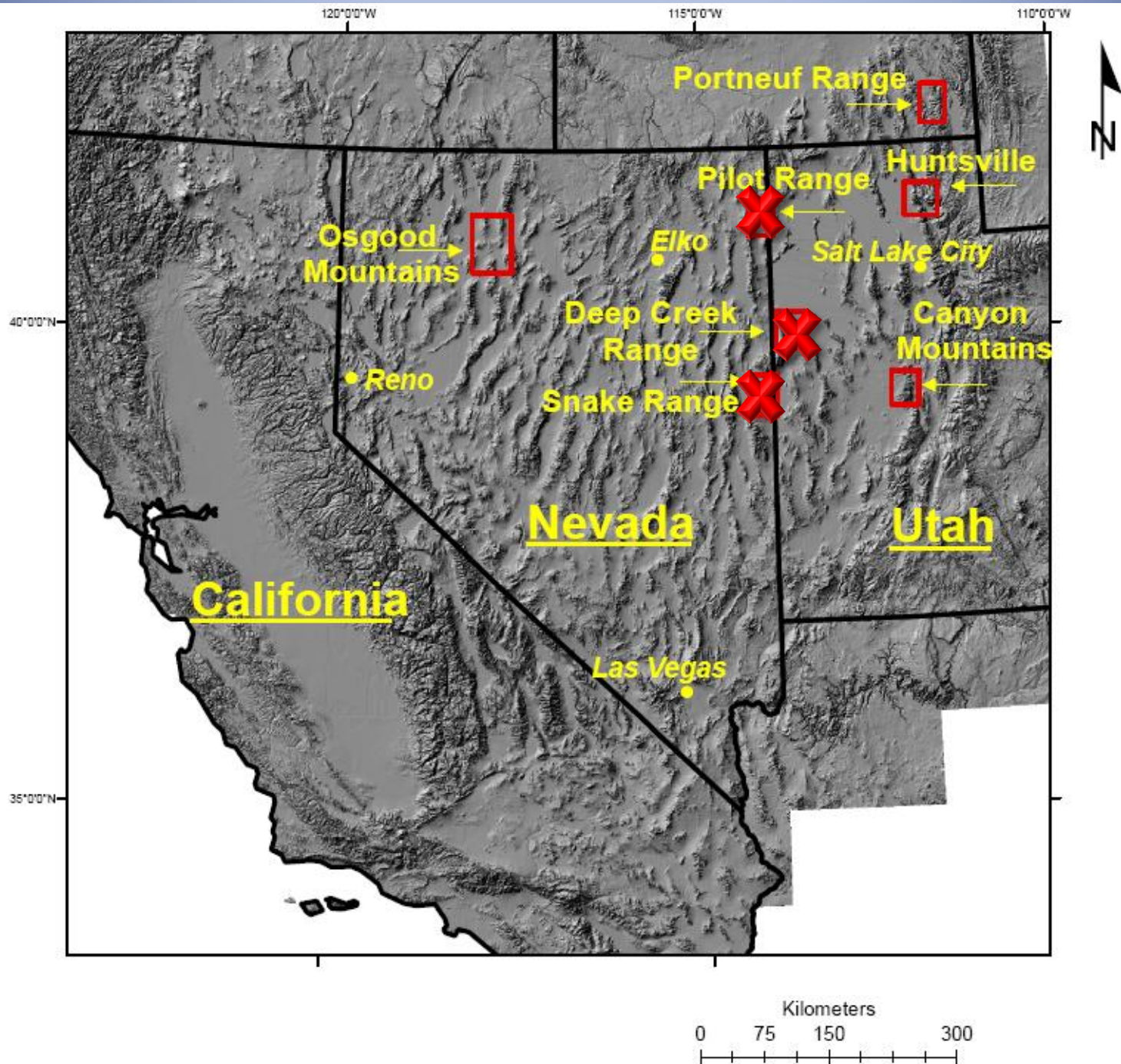


1.34-1.40, Mazatzal
1.40-1.48 and
provinces Yavapai

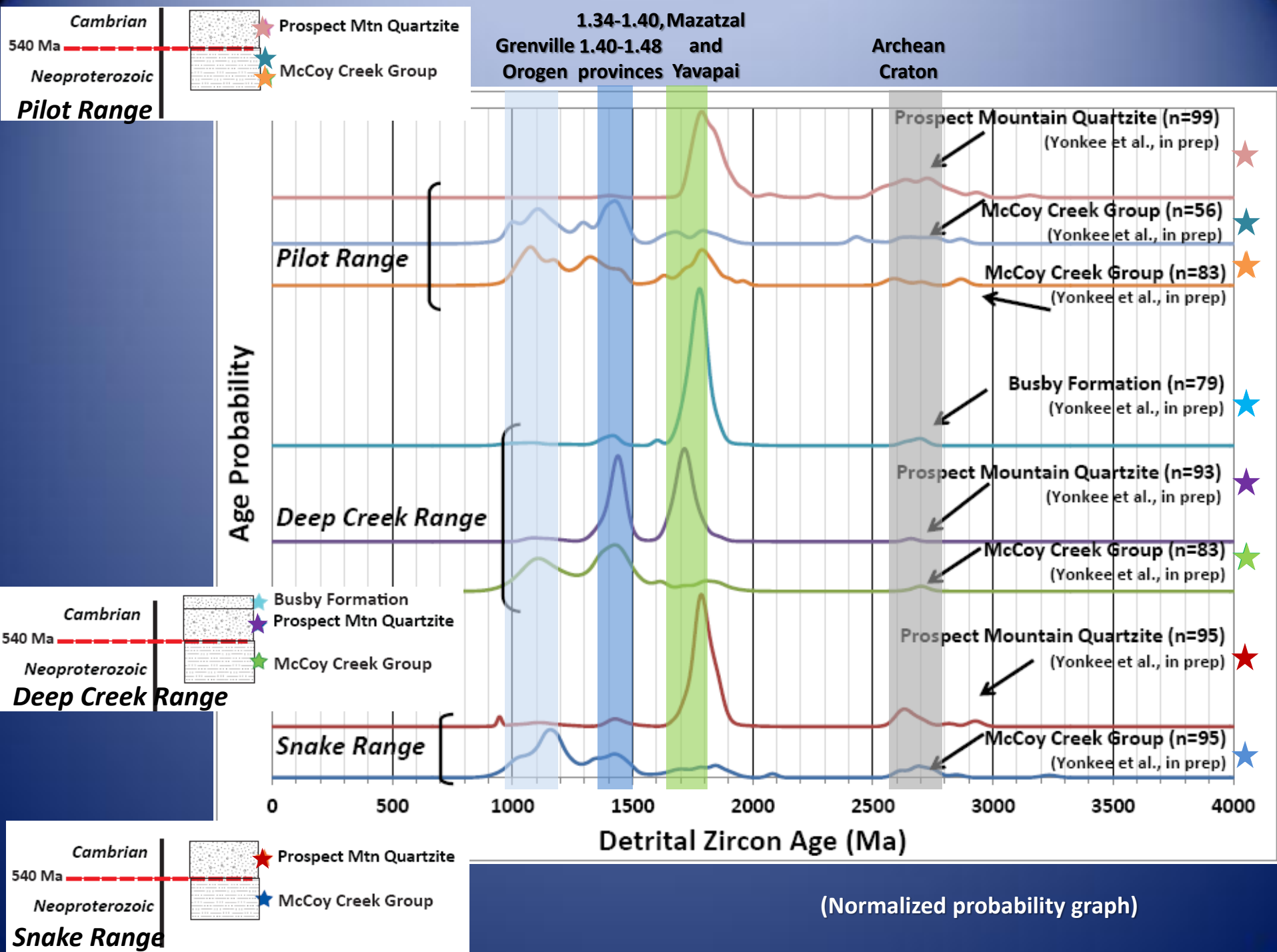
Archean
Craton

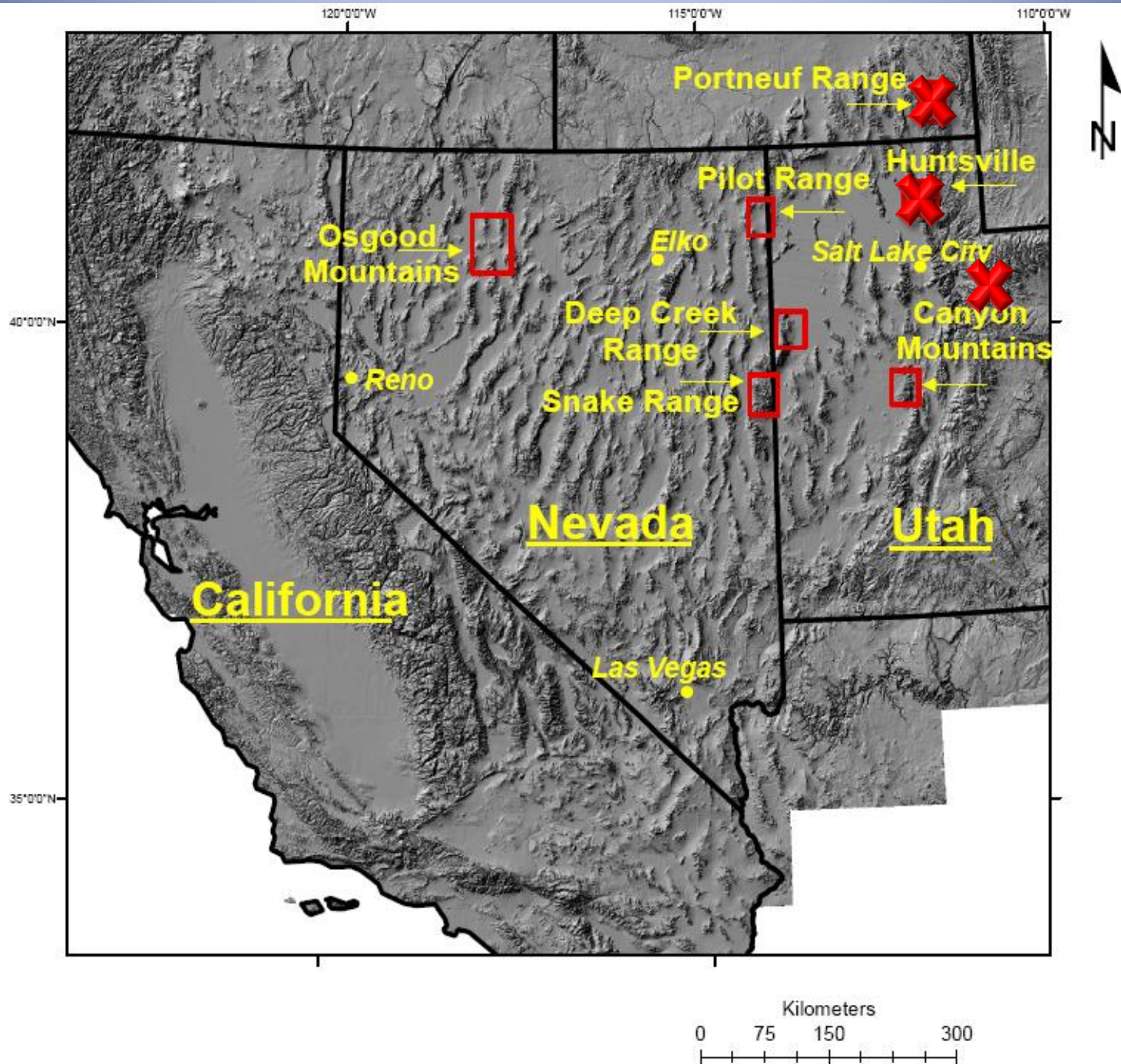


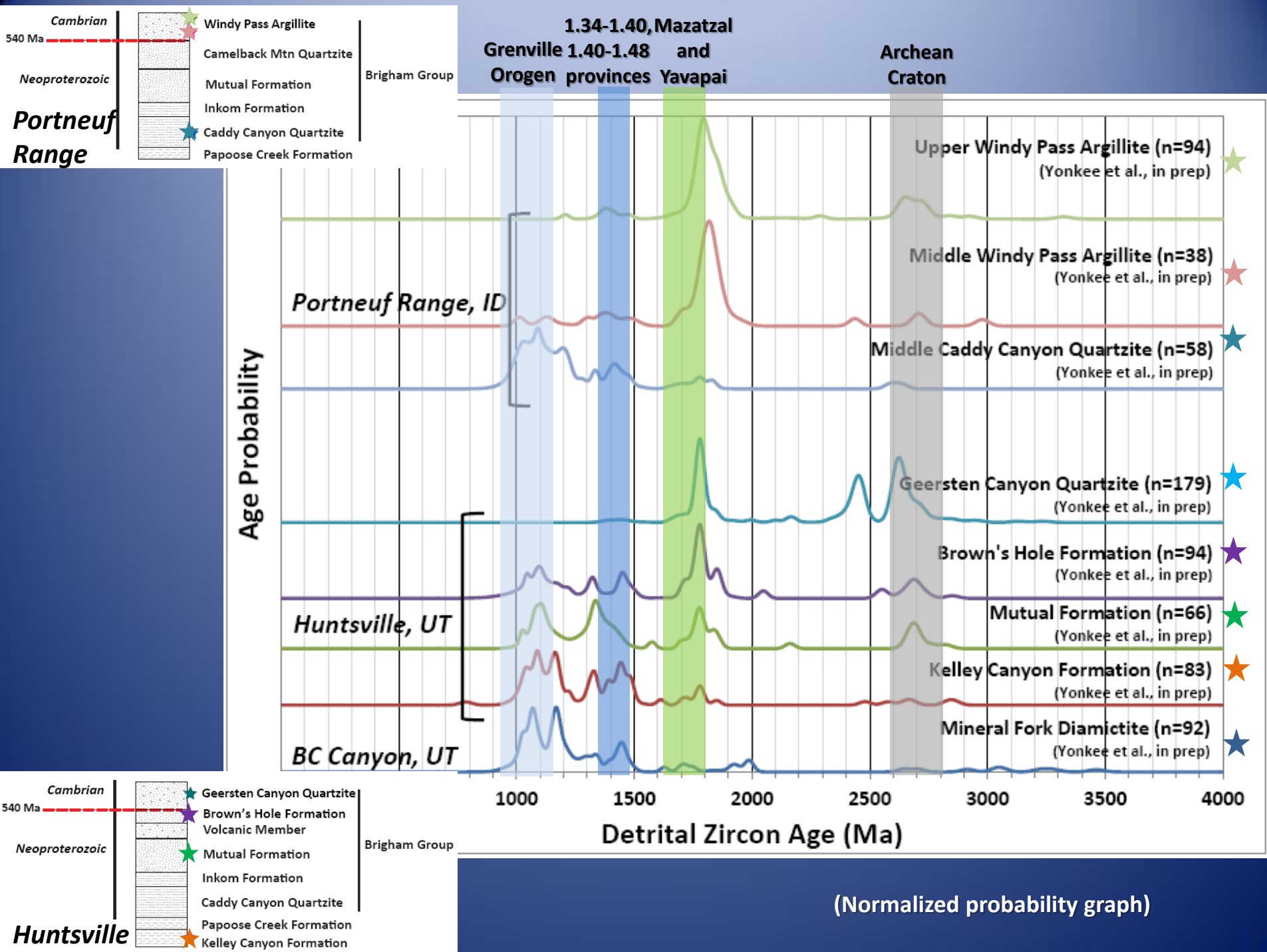
(Normalized probability graph)

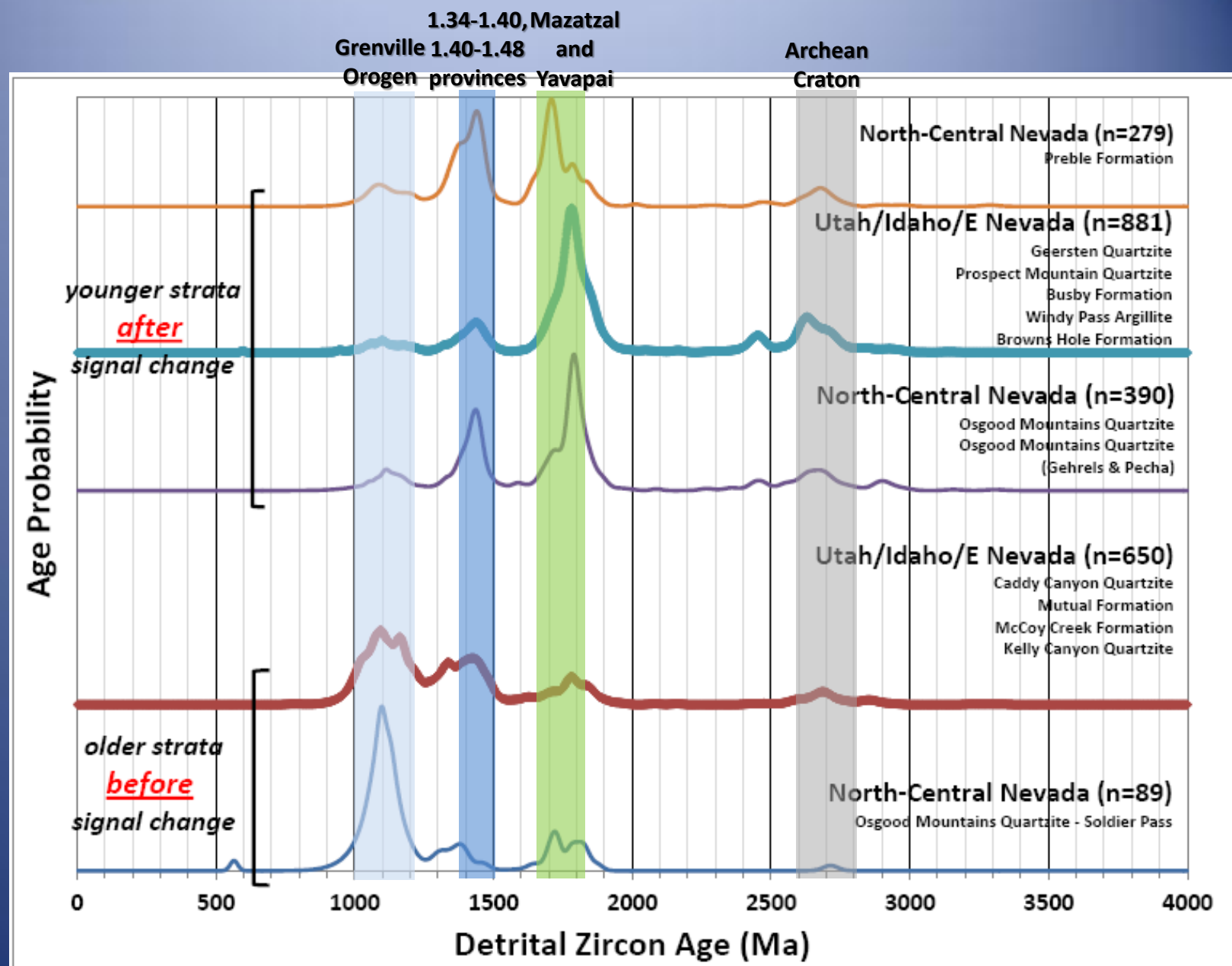


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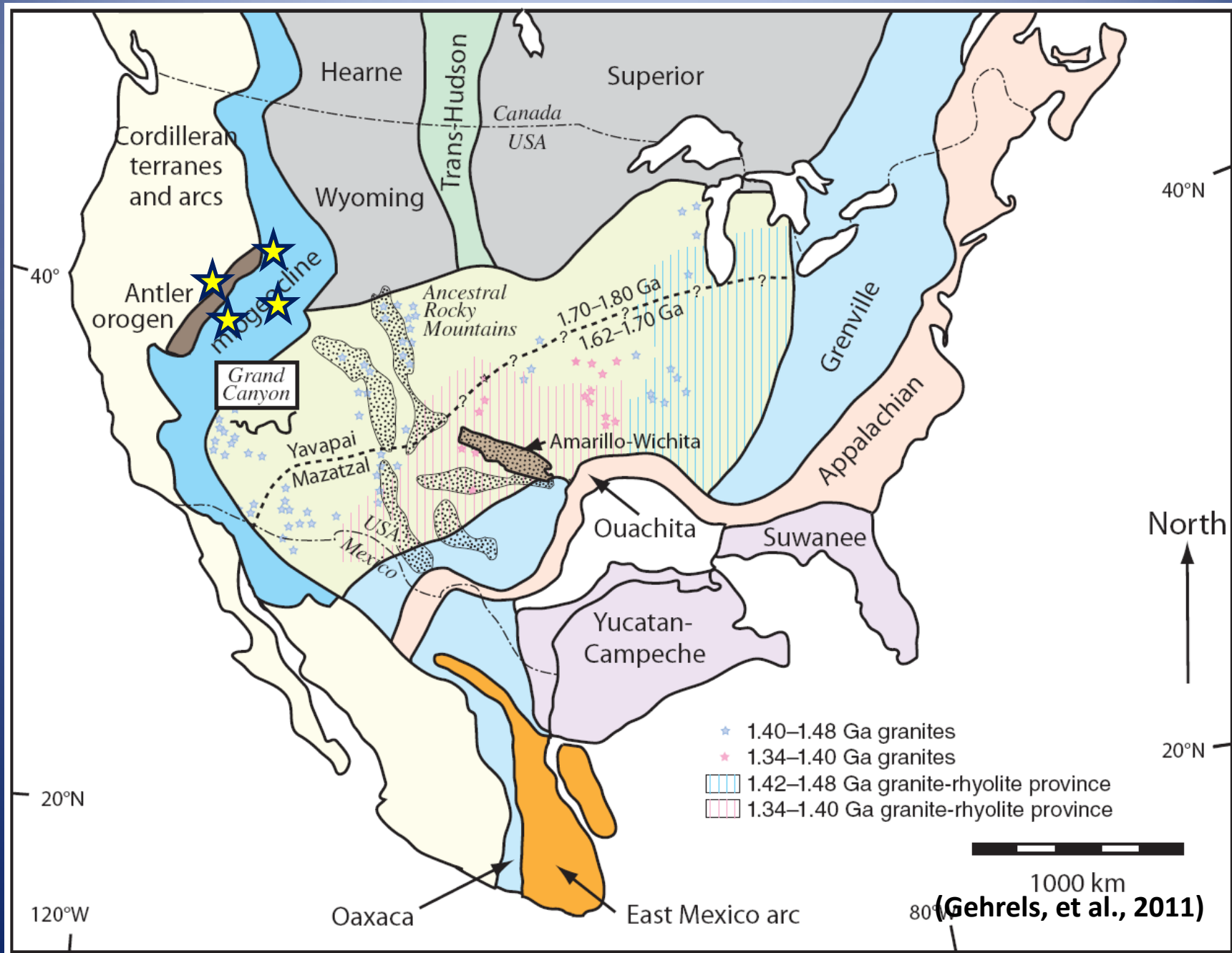


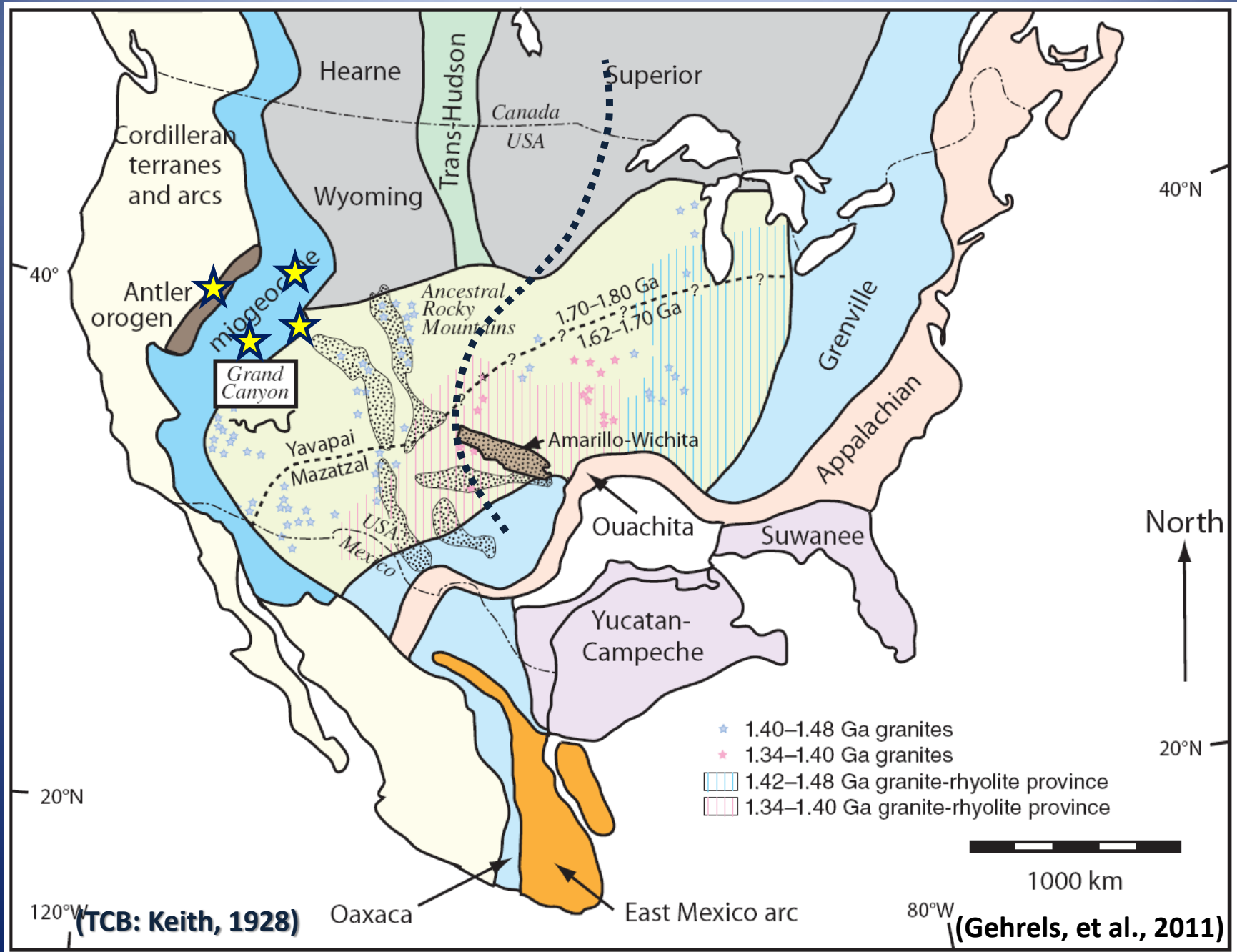


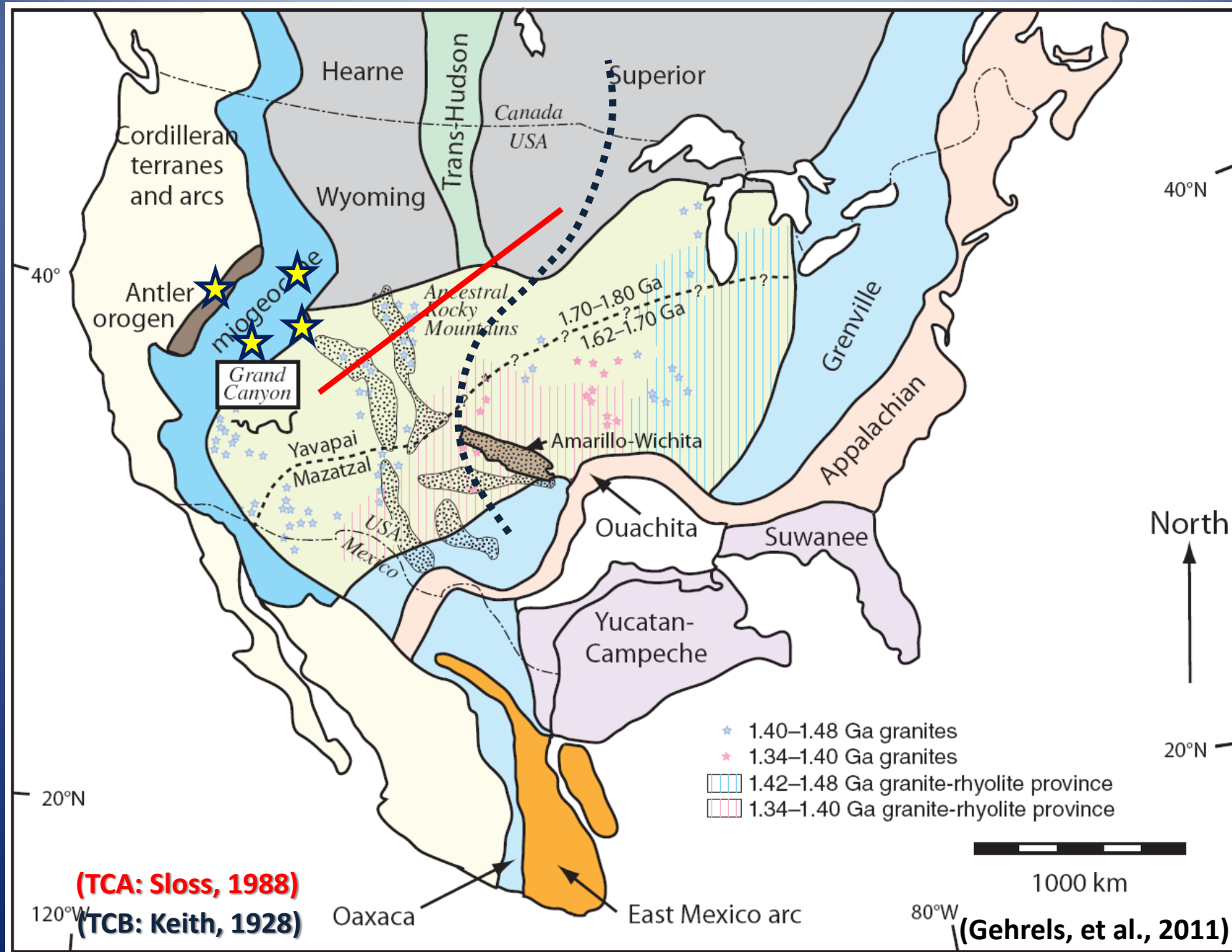


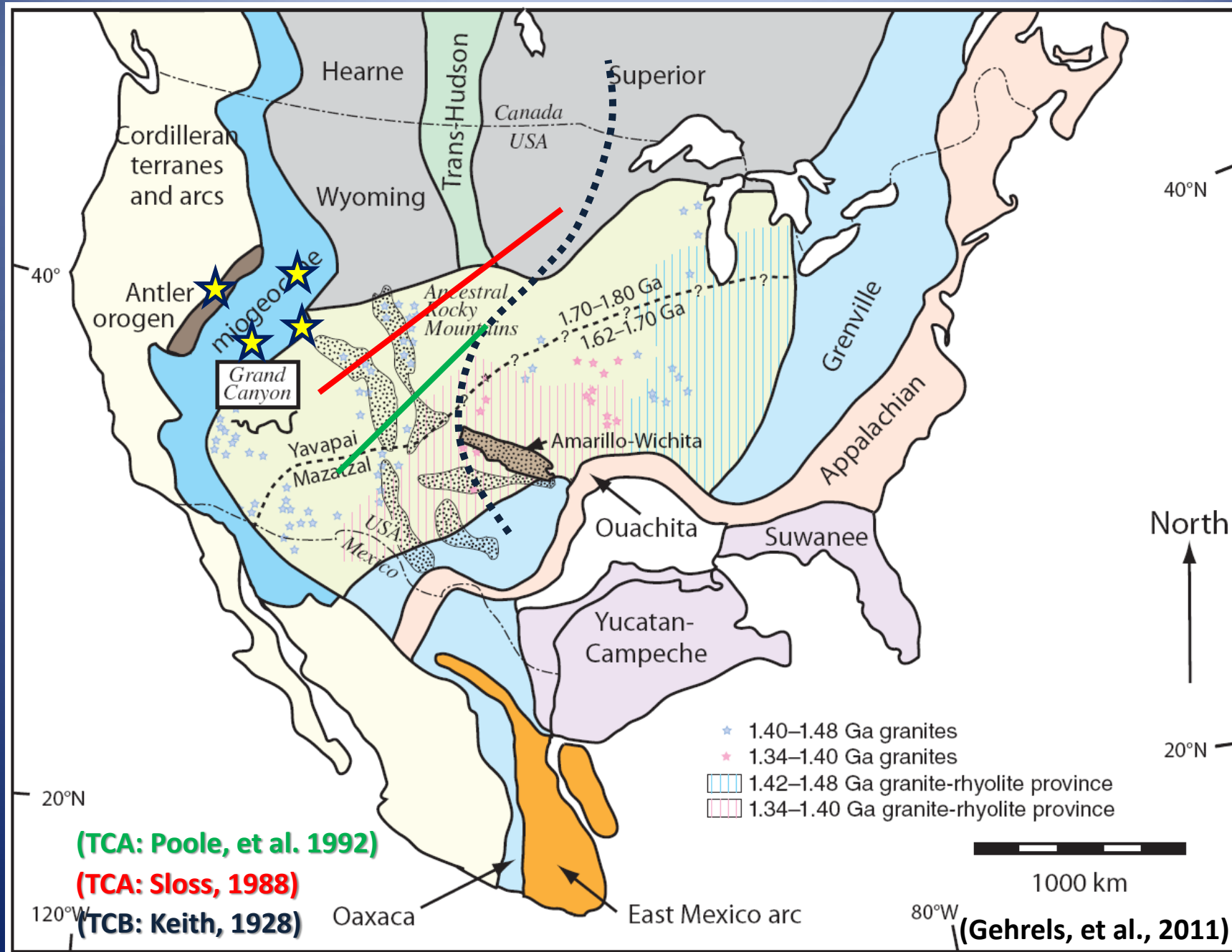


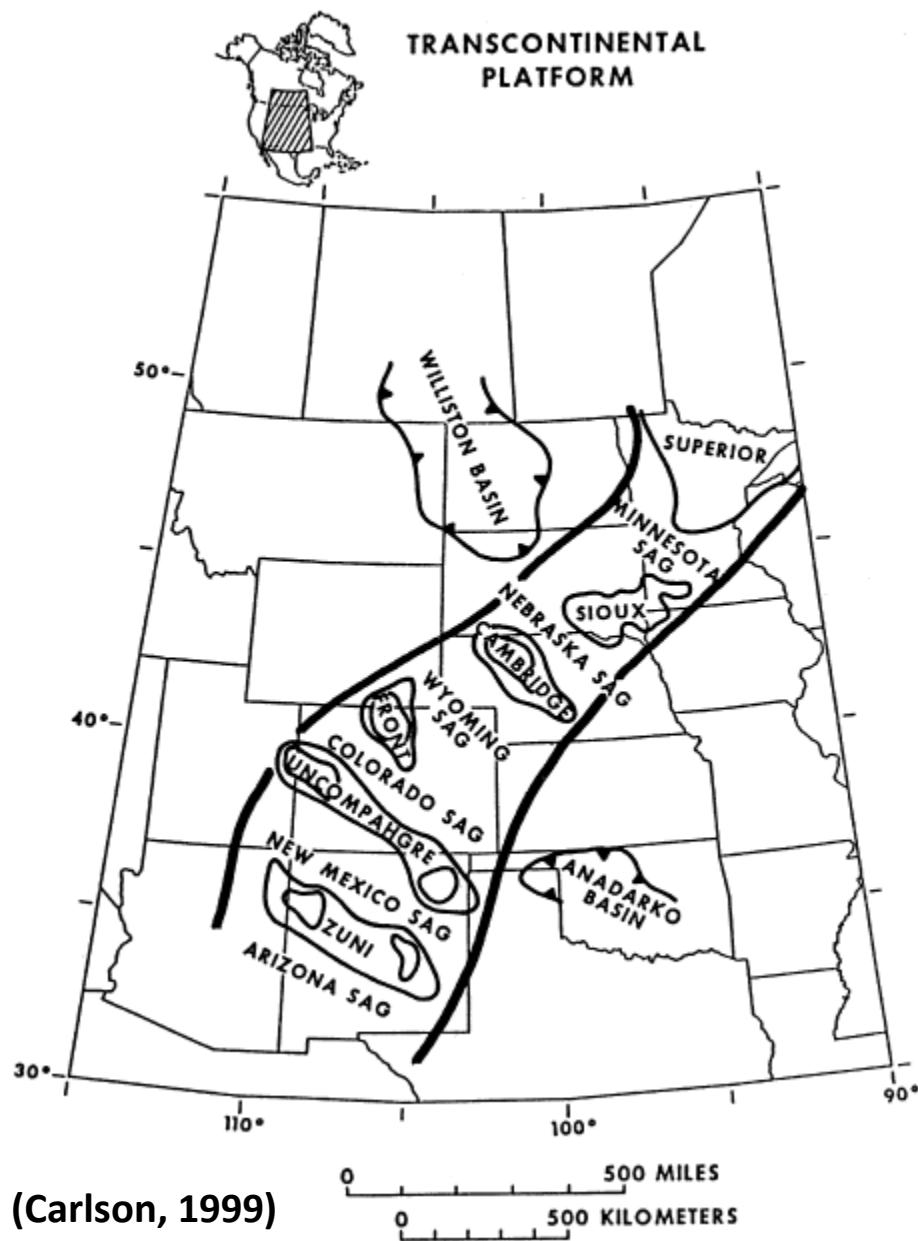
(Normalized probability graph)

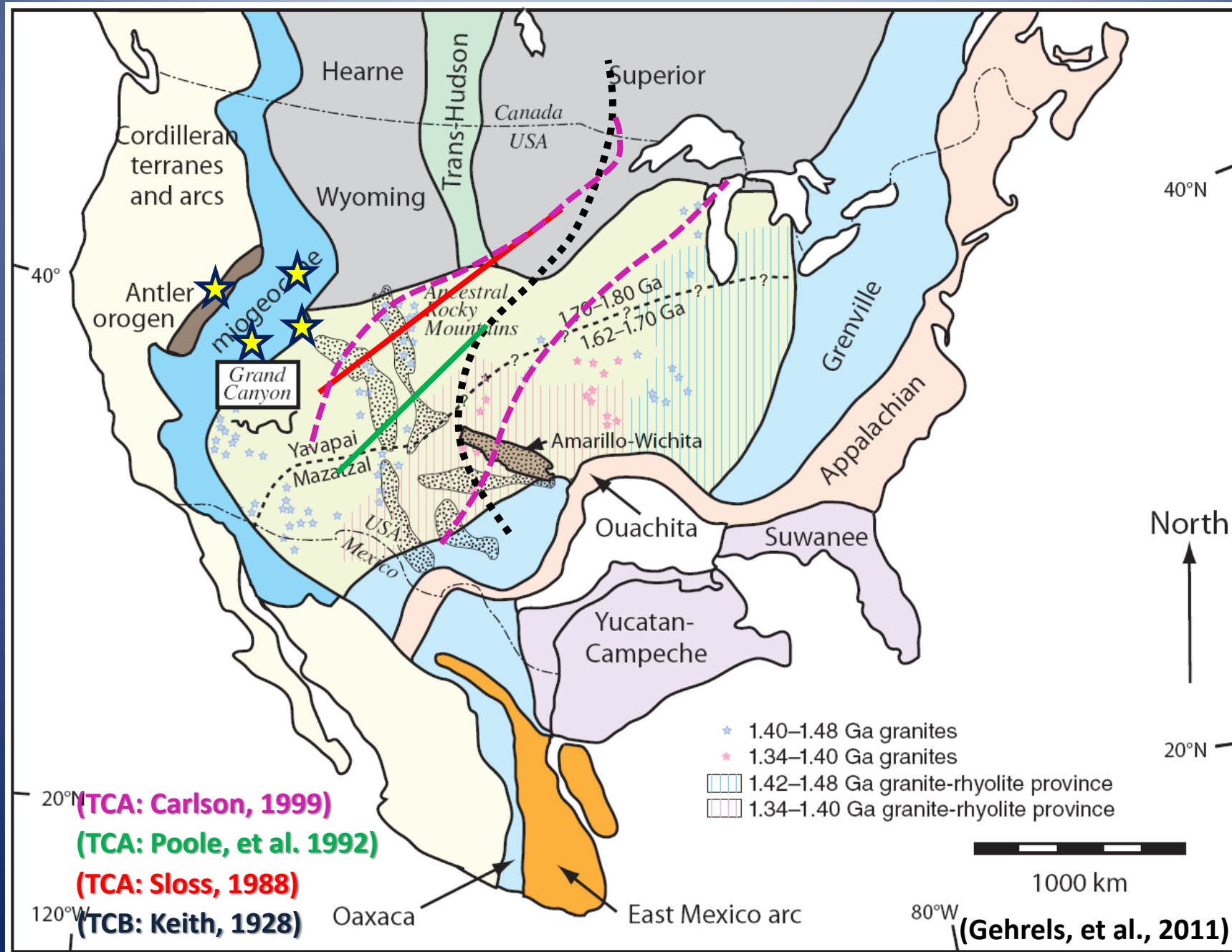










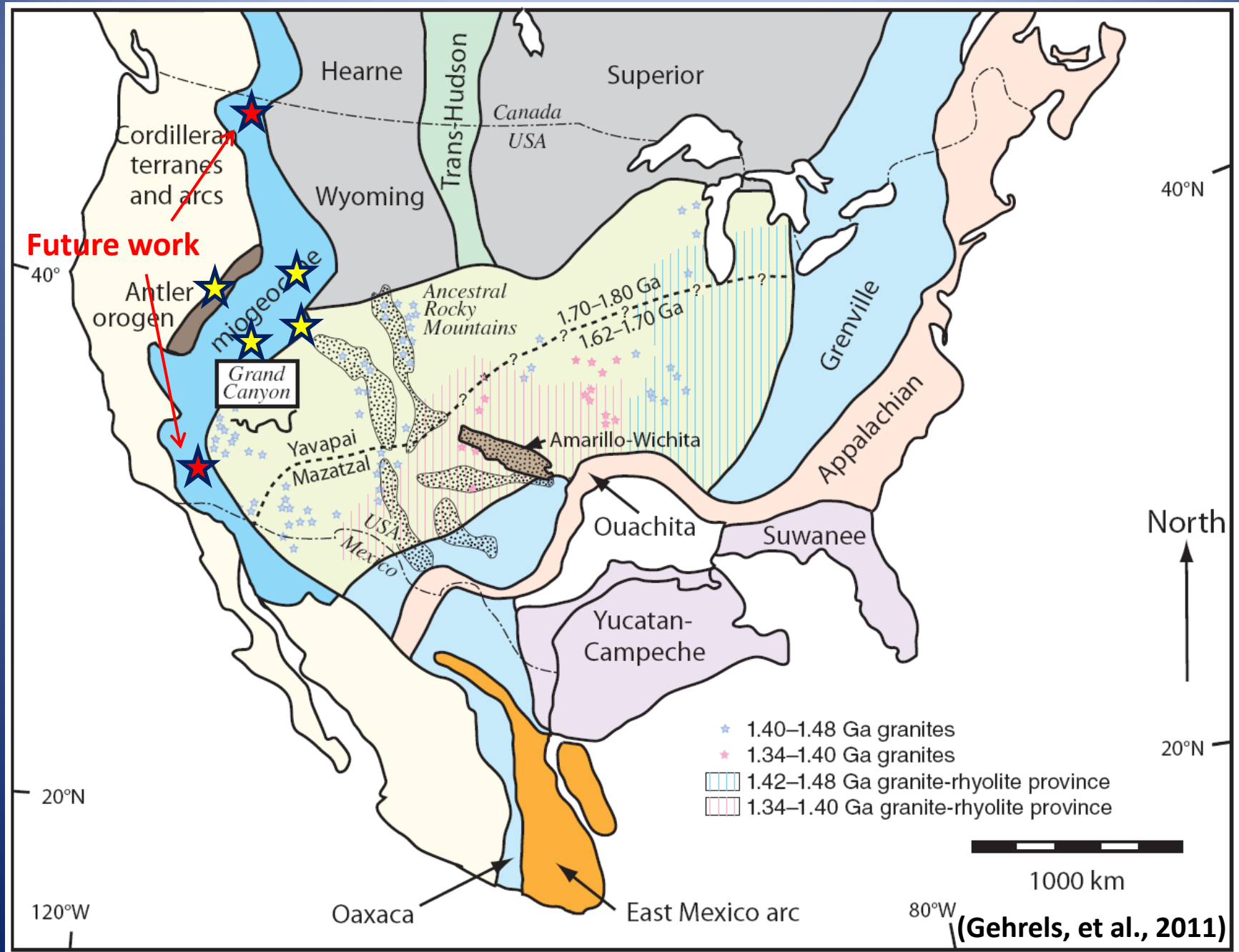


Conclusions

- DZ signal change
- Similar signal change in coeval strata regionally
- Implies regional coeval provenance change
- What blocked the feed of Grenville sands?
 - Transcontinental arch?

Future Work

- **Constrain the age of the provenance change**
 - Correlation tool?
- **Broaden geographically**
- **Potential targets**
 - NE Washington/NW Idaho
 - SE California





Thank you!

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- GSA travel grant



