

***Mechanism of Carboniferous-Permian transgression in the east Ordos basin and their responding paleoecology variability, Insight from detrital geochronology and paleontology data***

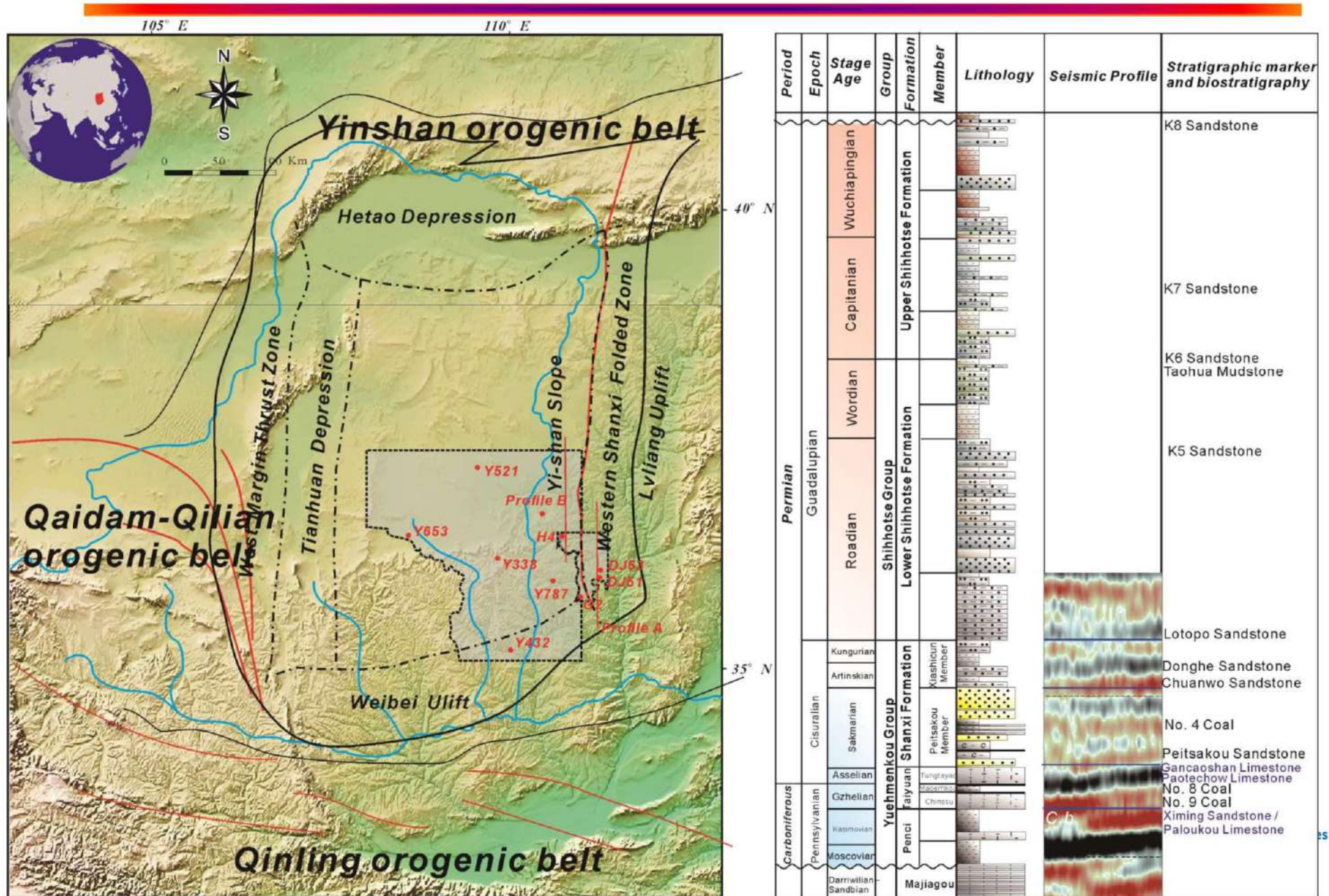
**Chao Fu<sup>1,2</sup>, Xinghe Yu<sup>1</sup>, Marc Jolivet<sup>2</sup>, Shunli Li<sup>1</sup>,  
Shi Shi<sup>3</sup>, Shuxin Li<sup>3</sup>, Zixiao Peng<sup>1</sup>**

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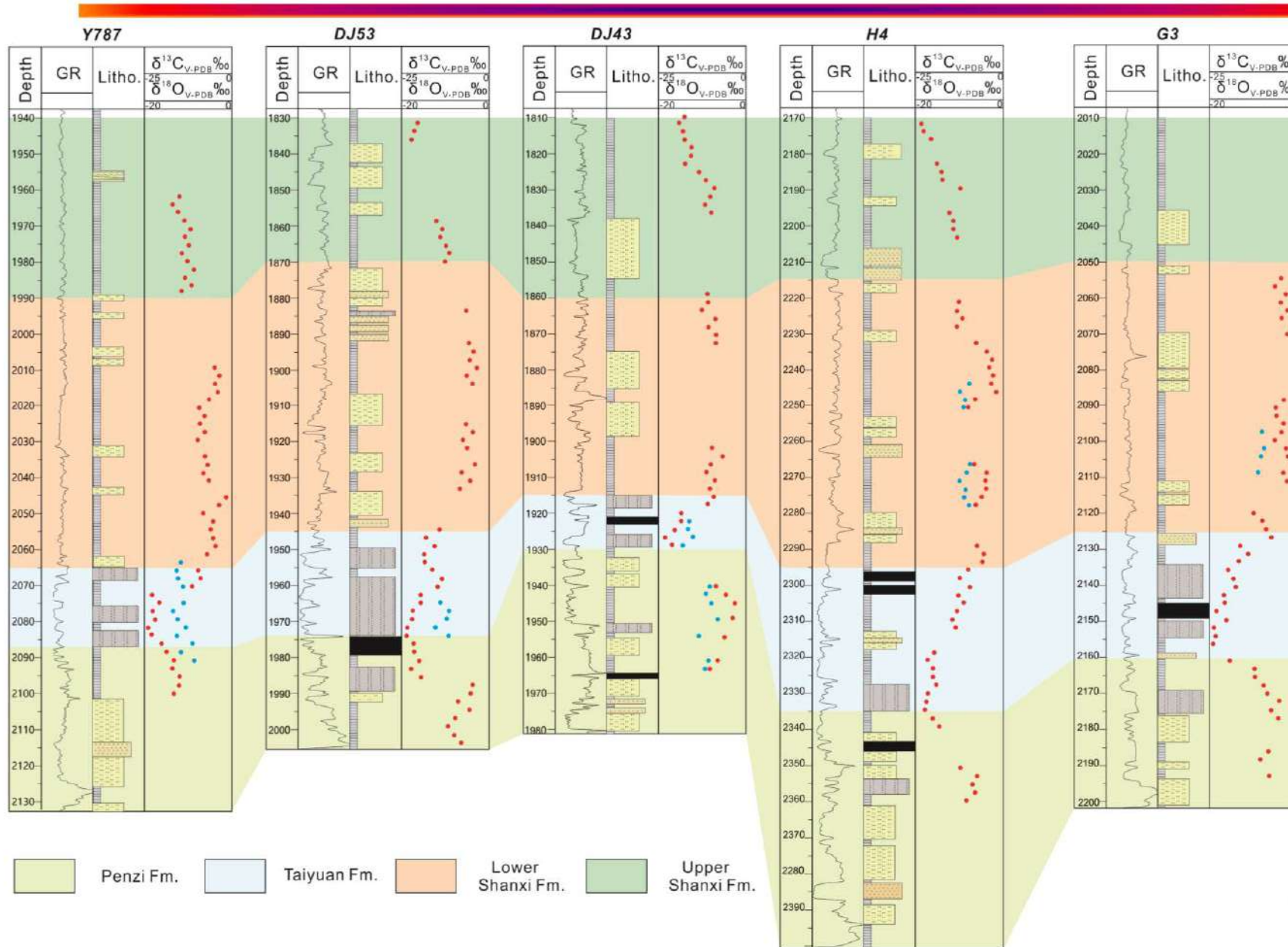
19 Janvier, 2020



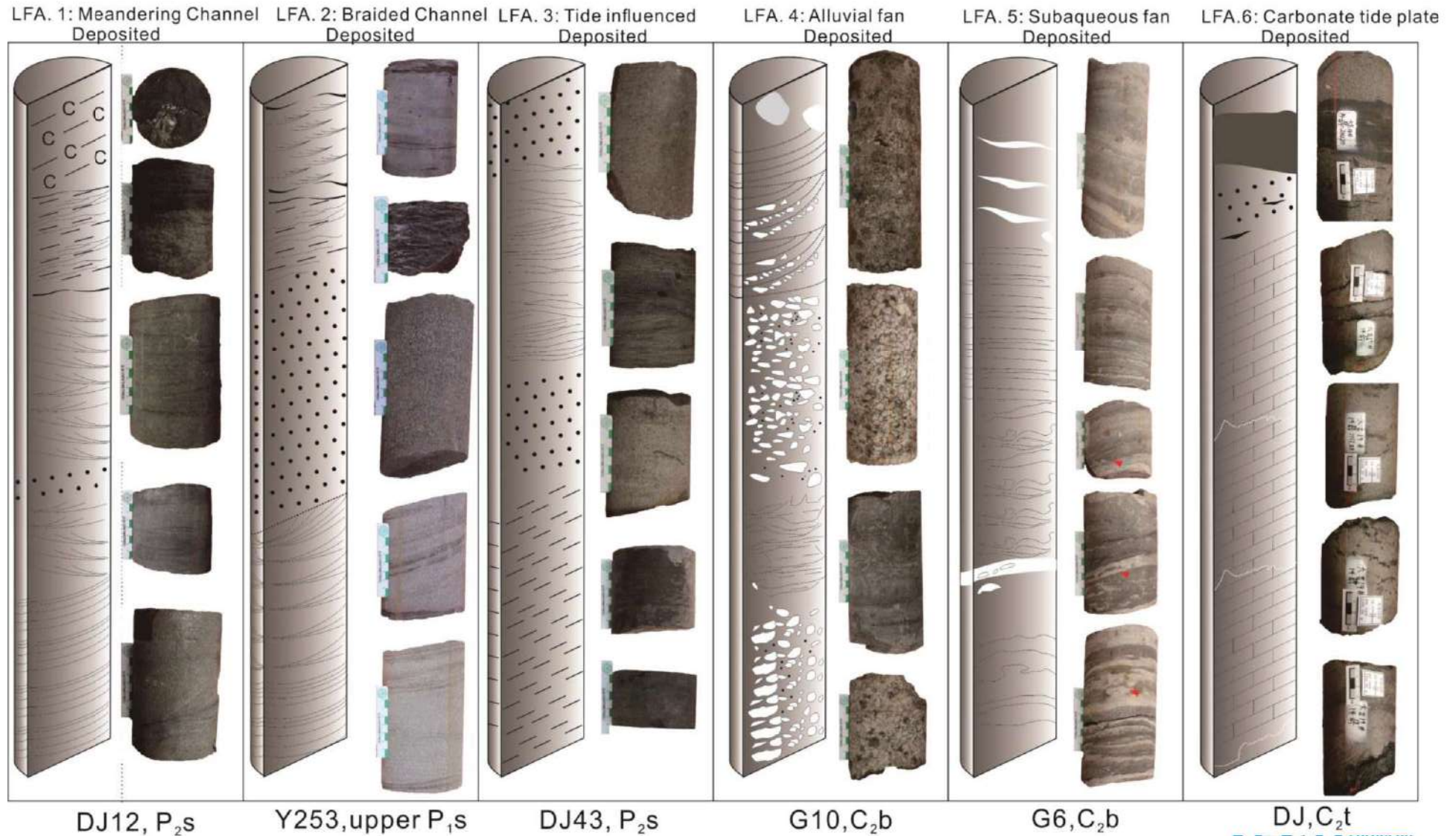
# Geological Settings



# Geological Setting



# Lithofacies classification



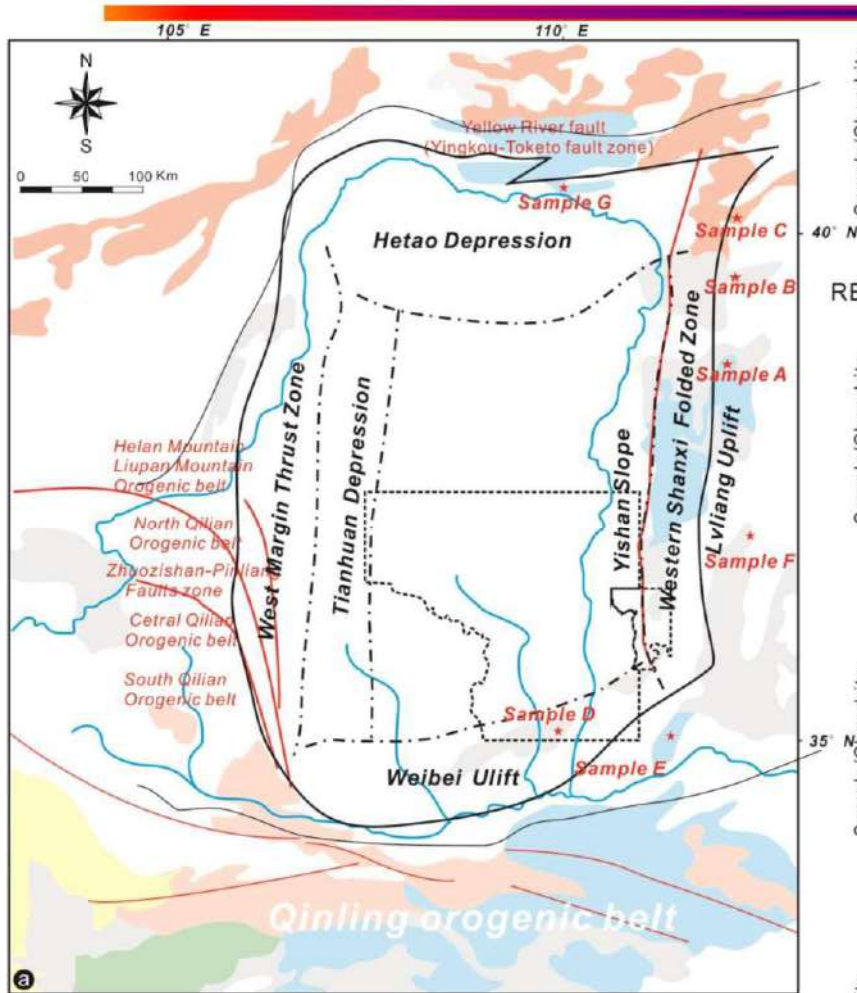
## *Outline*

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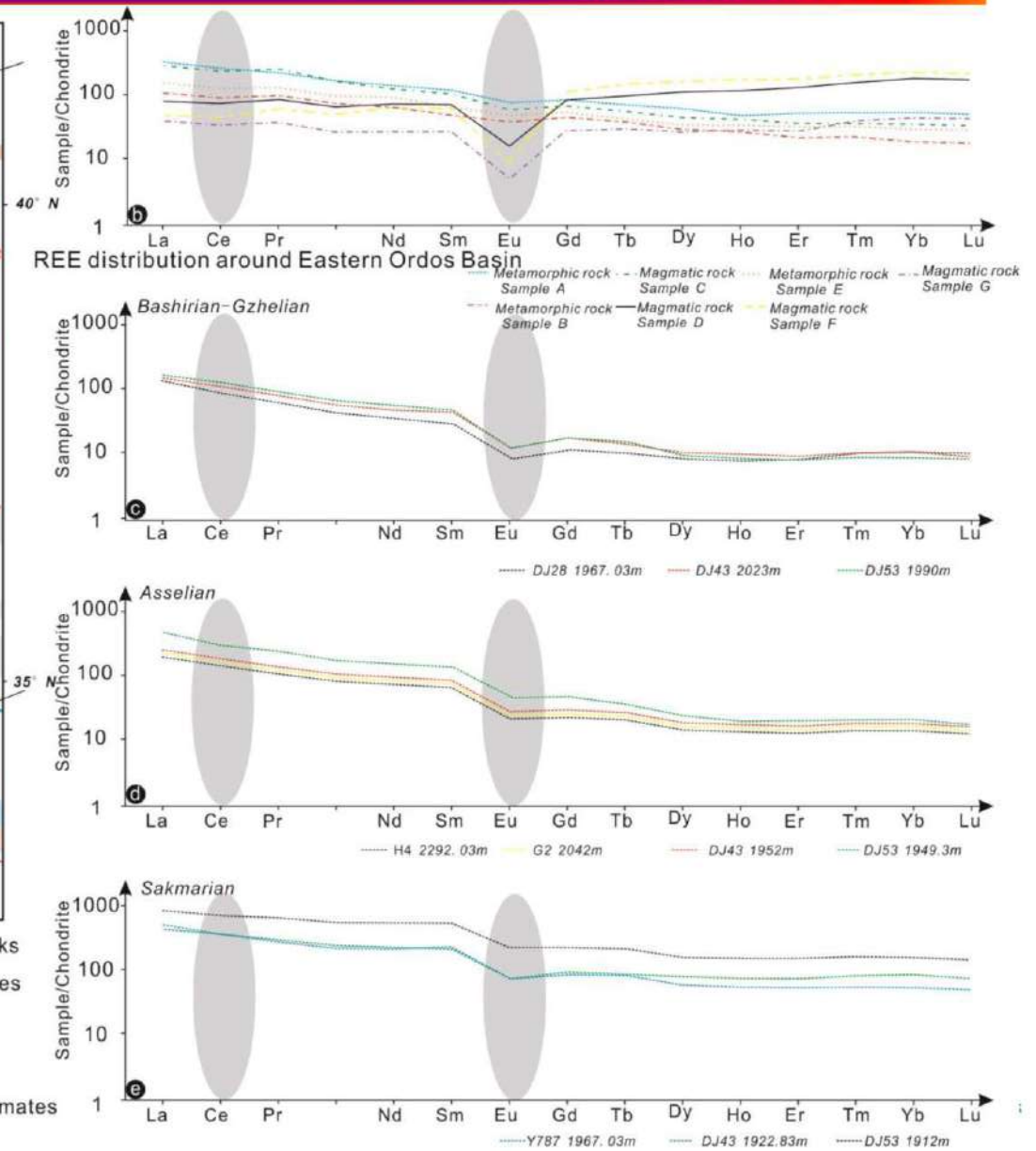
- **Religion Sea Level Rebuild**
- **Provenance area identification and S2S Reconstruction**
- **Mechanism of Sea level fluctuation**
- **Conclusion**

# Religion Sea Level Rebuild

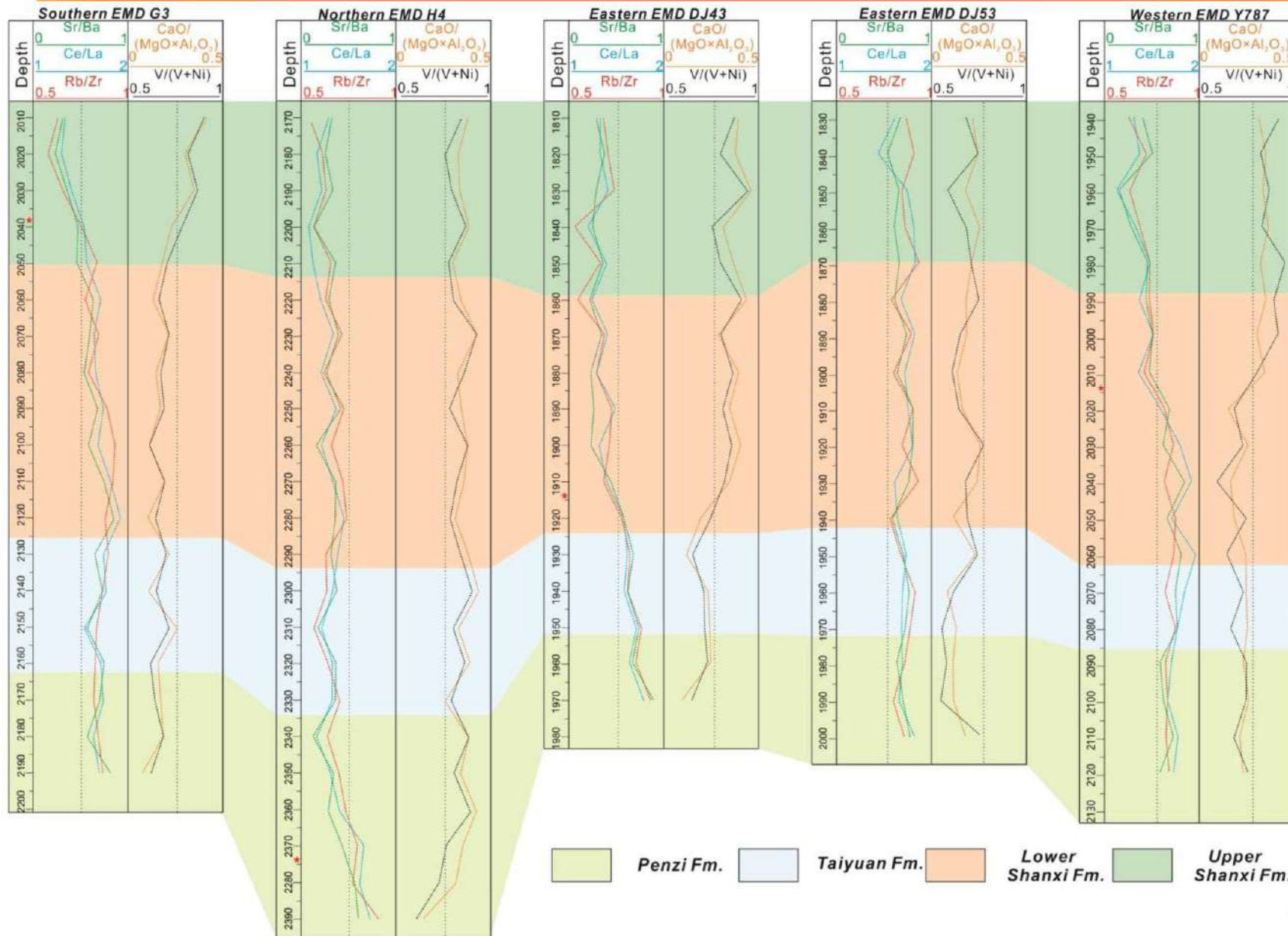
## Rare Earth Element



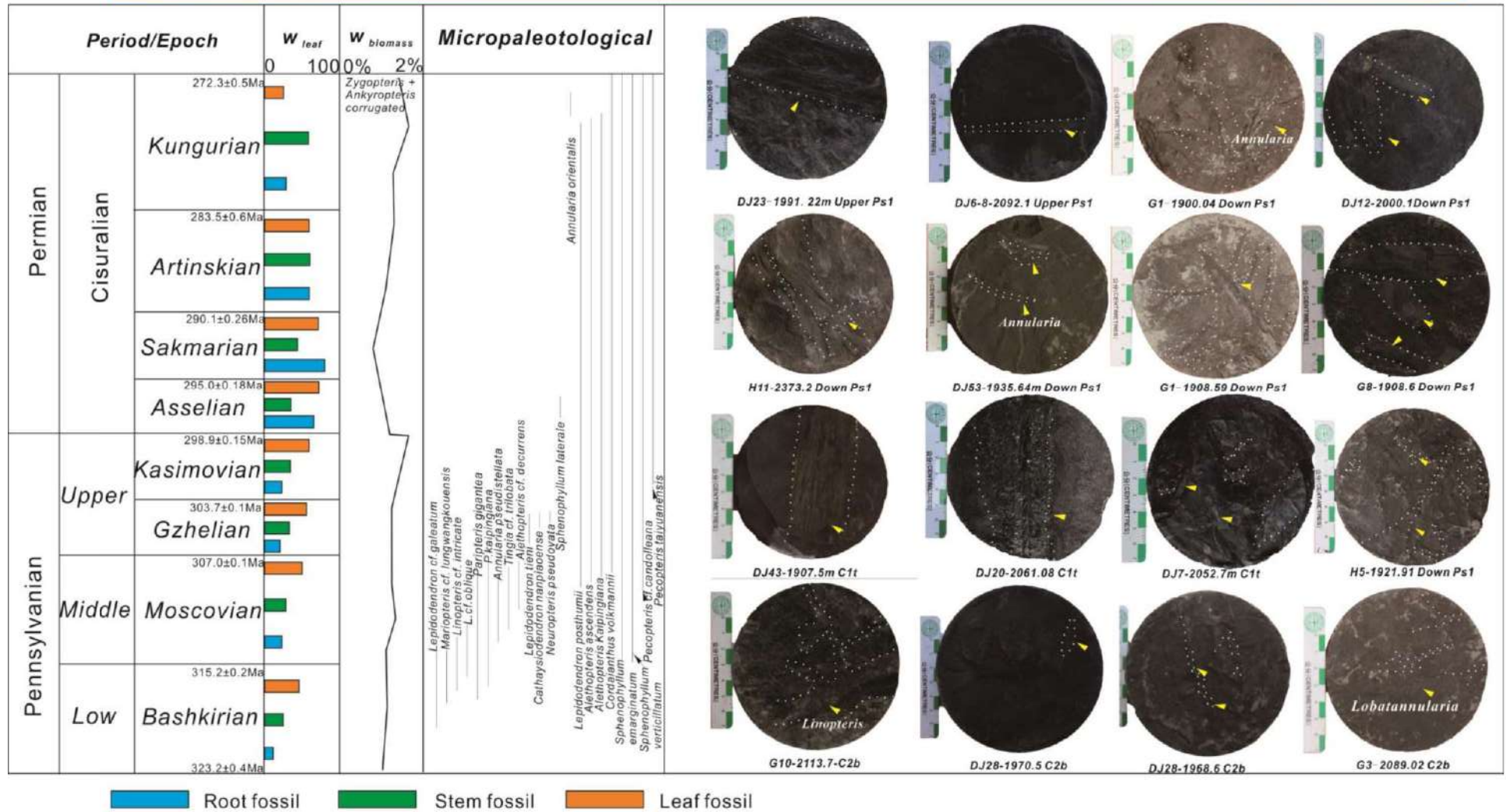
- Early to middle Proterozoic Metamorphosed sedimentary and igneous rocks
- Middle-Lower Paleozoic dolomites and limestone with shales and sandstones
- Upper Paleozoic sandstones and shales with thin bed carbonates
- Mesozoic marine Sandstones, Shale and Carbonates
- Mesozoic/Cenozoic non-marine sandstones and shales with minor conglomerates
- Paleozoic/Mesozoic Granite
- Study block



# Religion Sea Level Rebuild

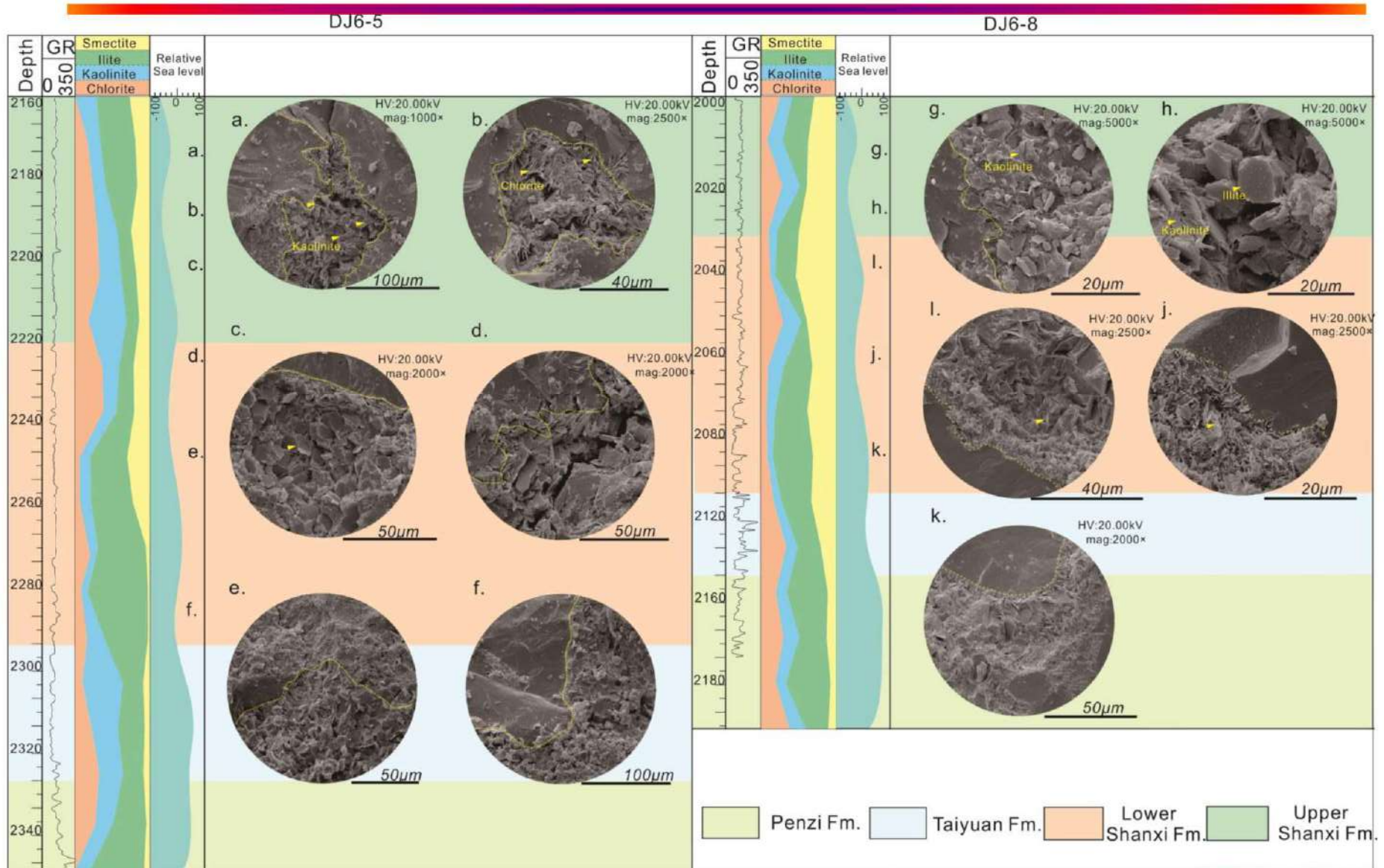


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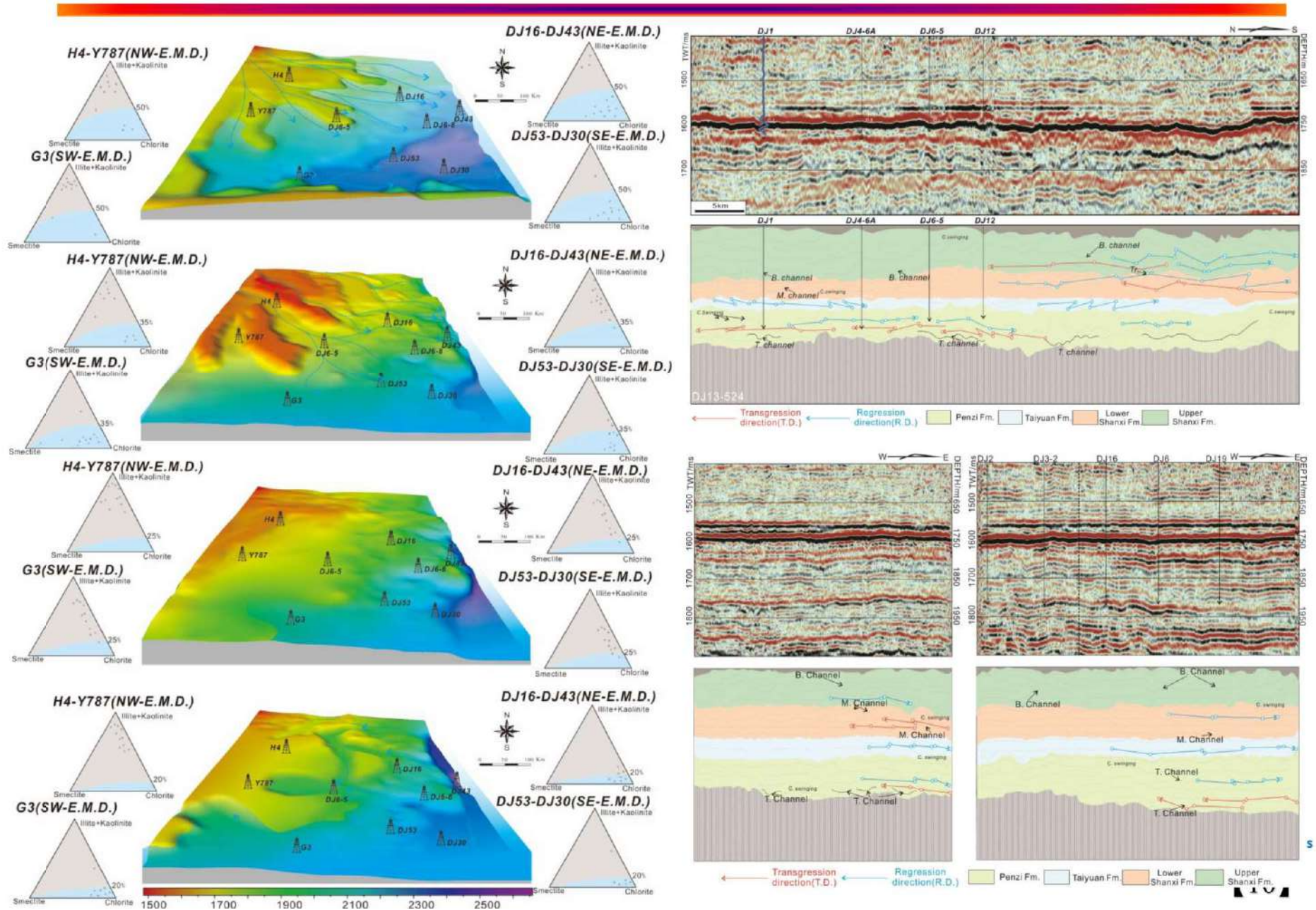




# Religion Sea Level Rebuild



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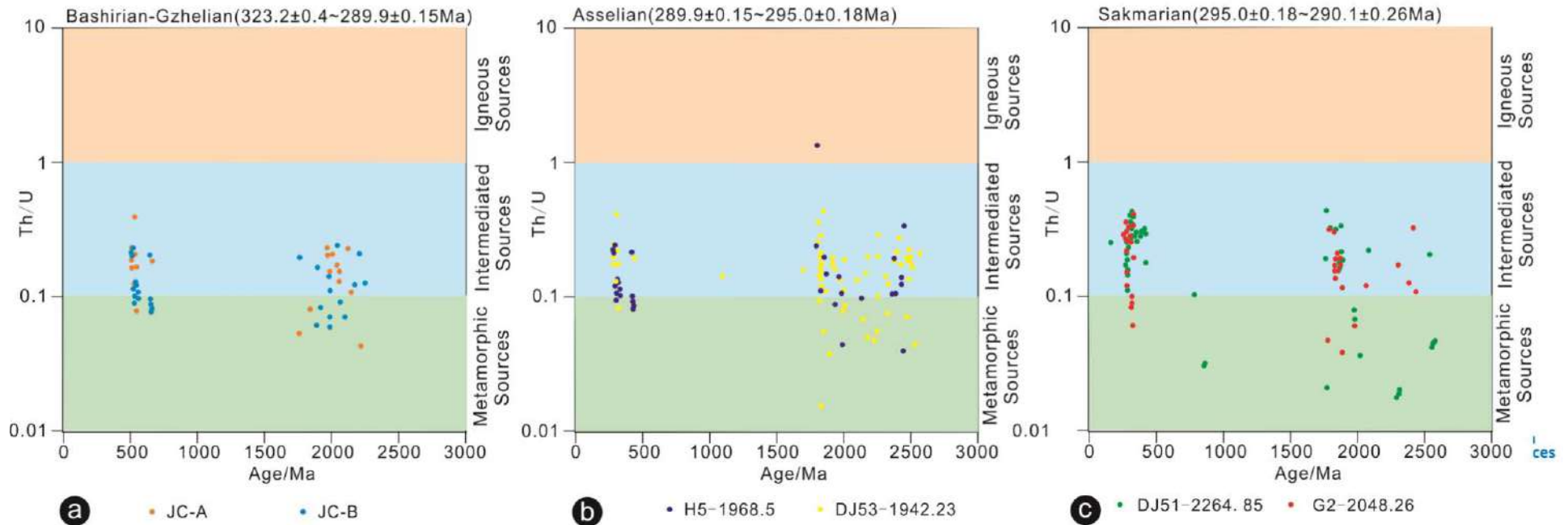
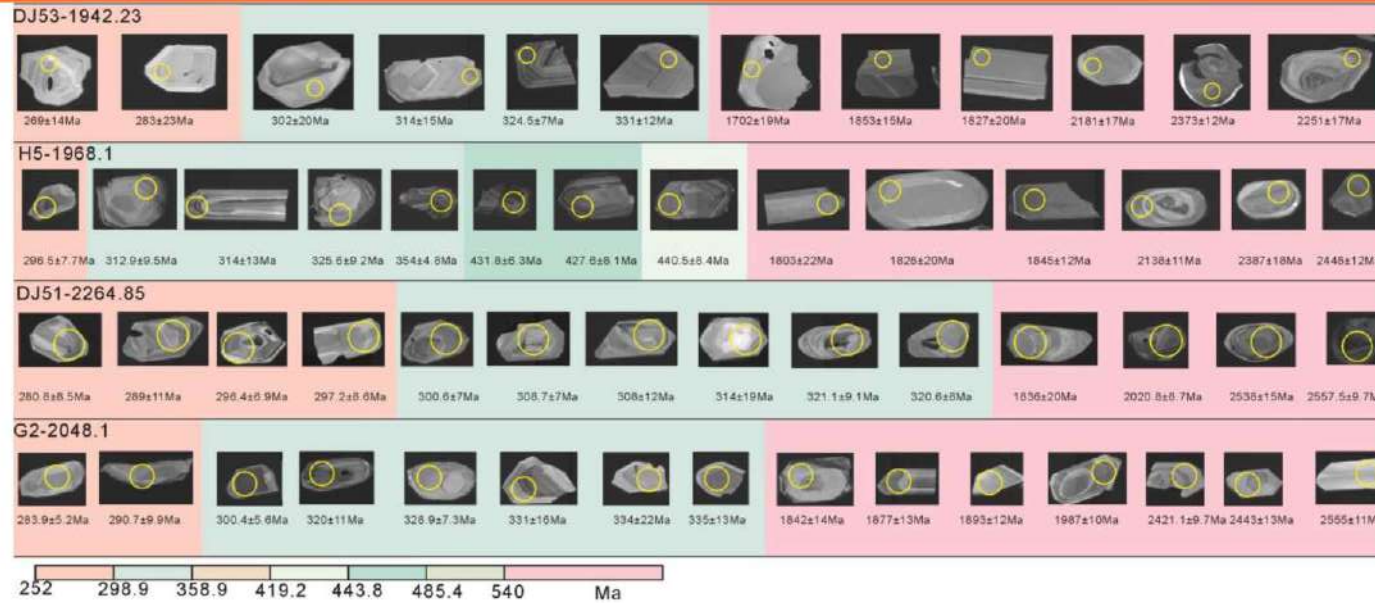


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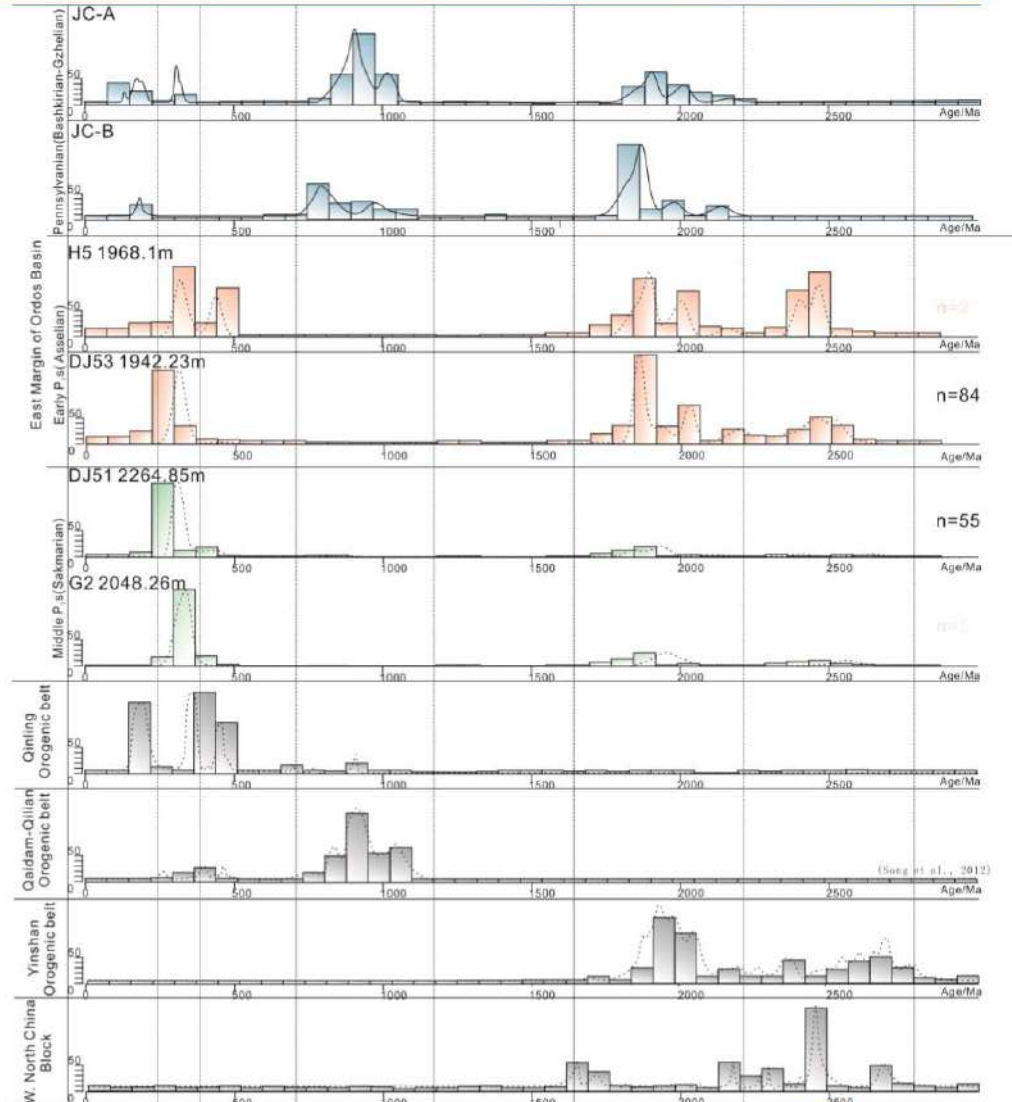
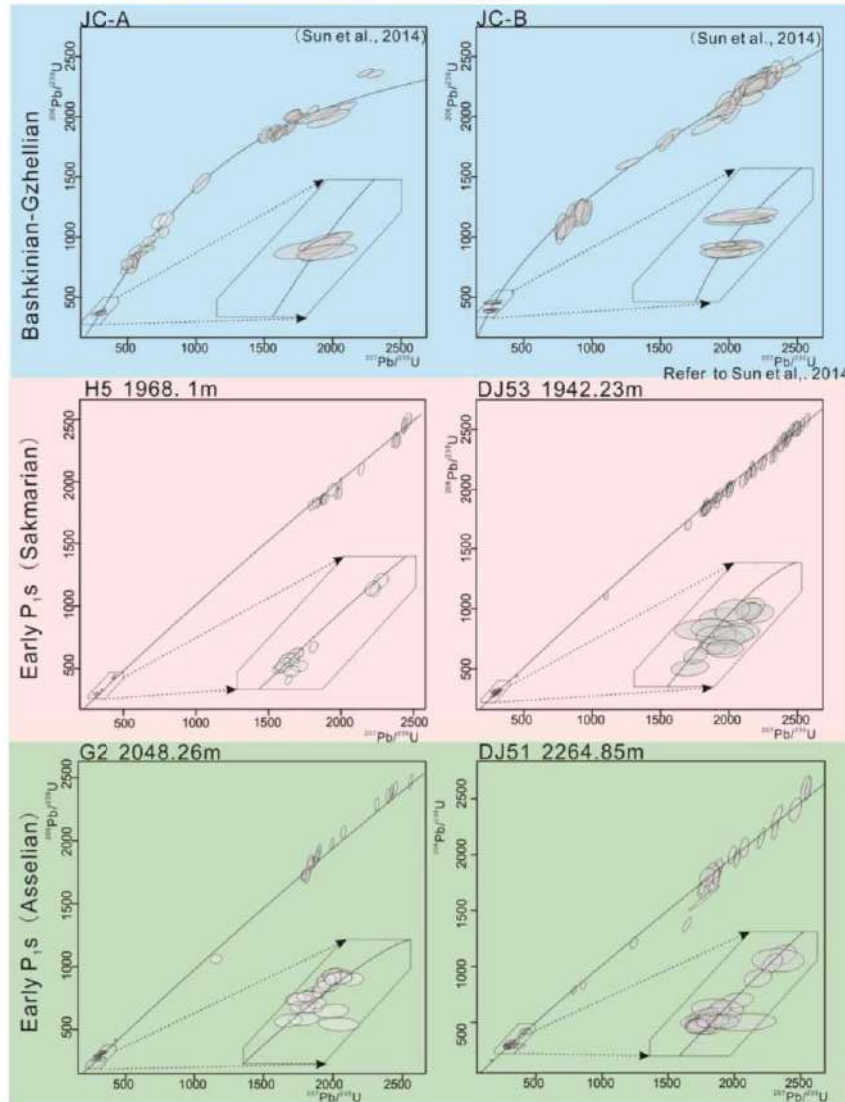
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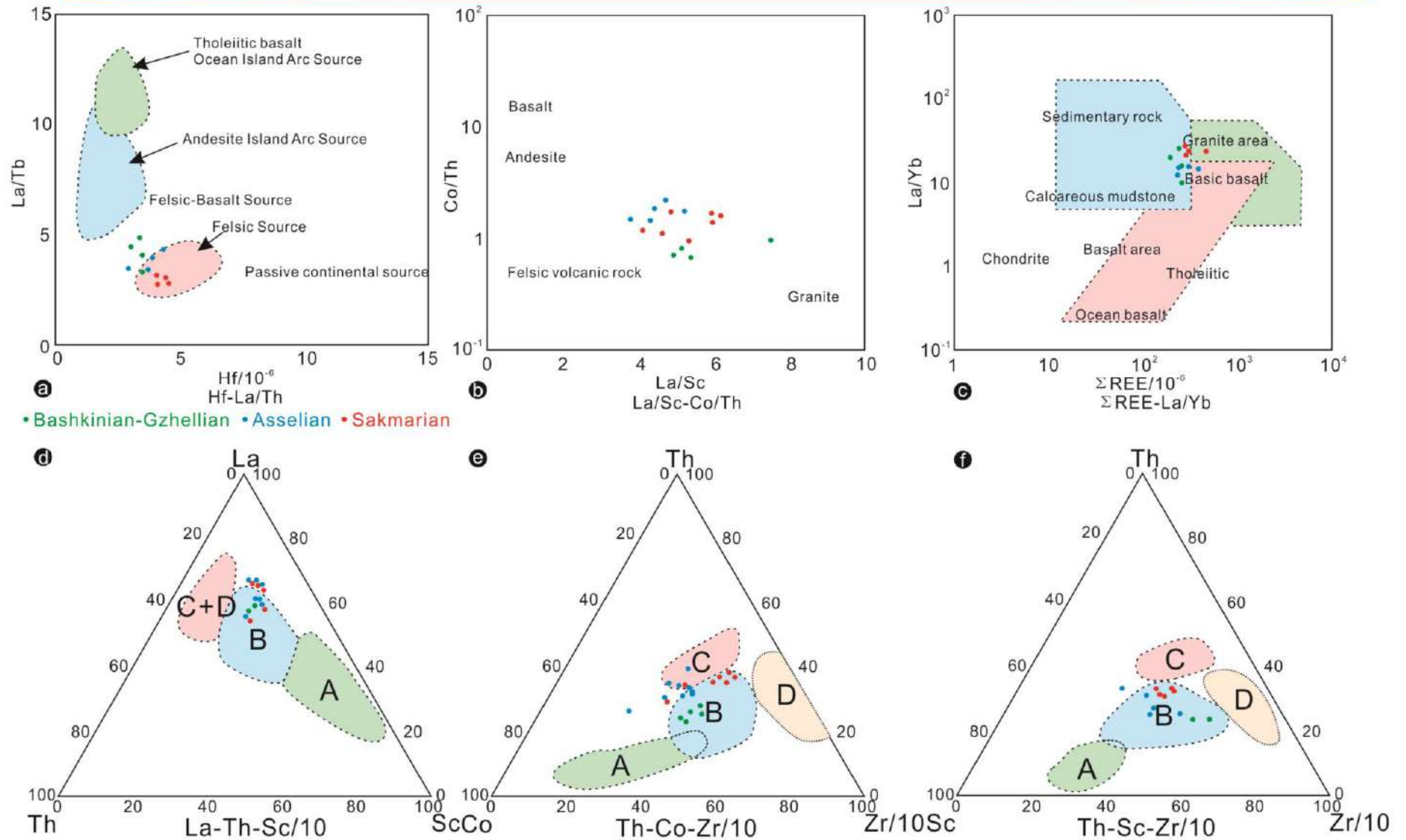
# Provenance area identification and S2S Reconstruction



# Provenance area identification and S2S Reconstruction



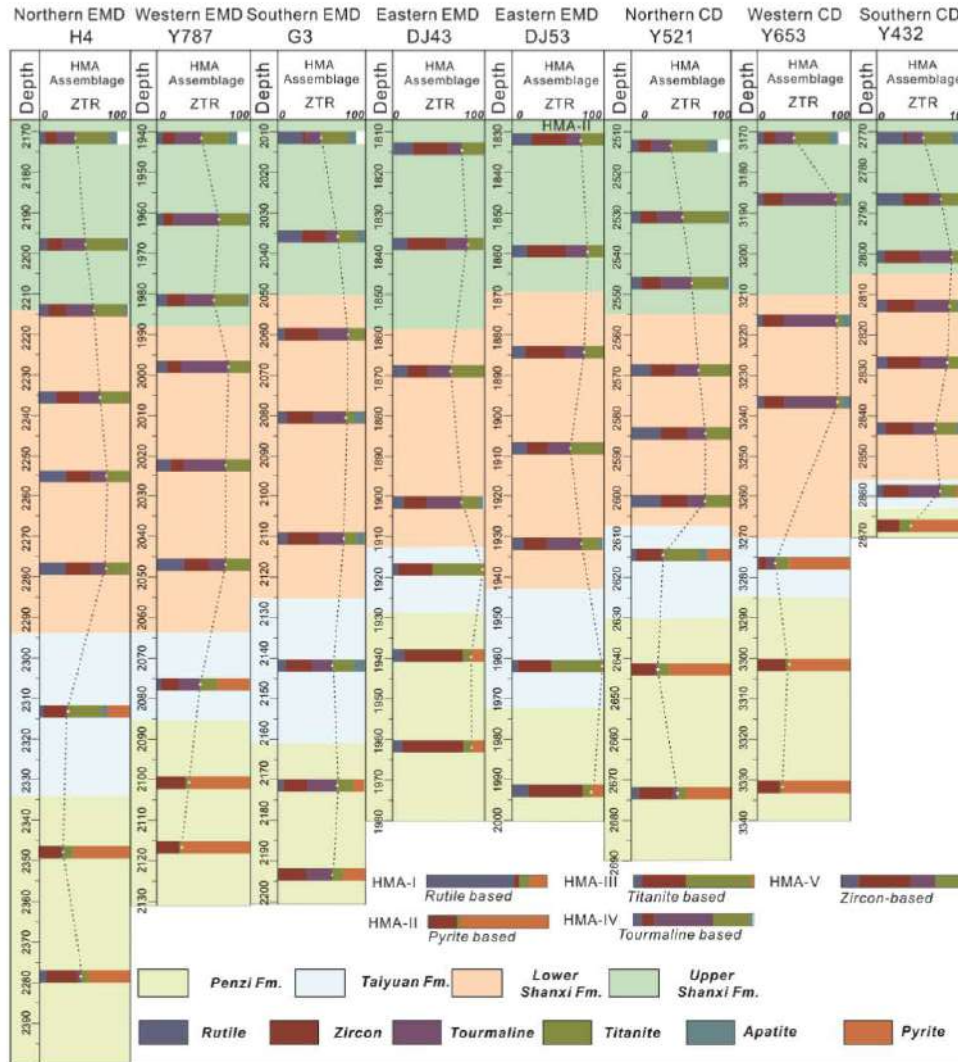
# Religion Sea Level Rebuild



• Bashkinian-Gzhellian • Asselian • Sakmarian

A-Continental island arc B-Ocean island arc C-Active continental margin D-Passive continental margin

# Provenance area identification and S2S Reconstruction



*During the Pennsylvanian, Qaidam-Qilian orogenic belt and deposited in a distal area.*

*In the interval of Asselian-Sakmarian, multi-provenance area provided sediment in the catchment. The sedimentary rate from the Qinling orogenic belt is 30 m/Ma, and that supplied from the western and northern Ordos basin are 10m/Ma and 30m/Ma, respectively.*

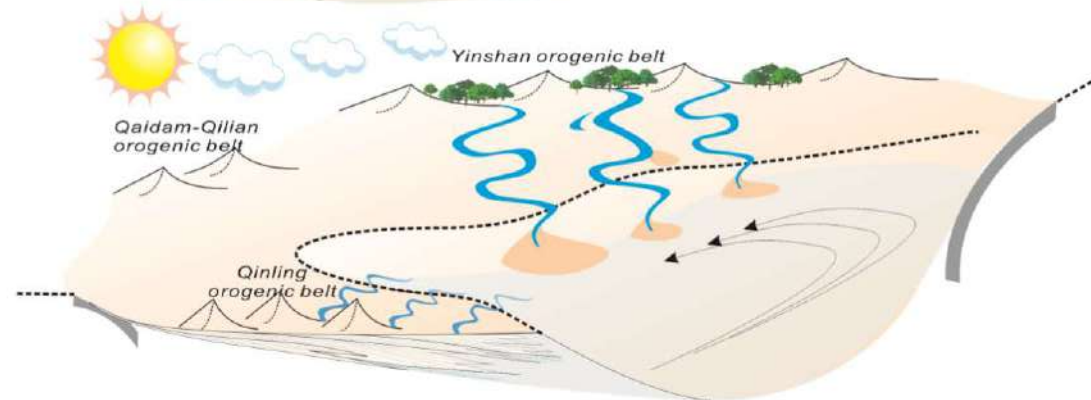
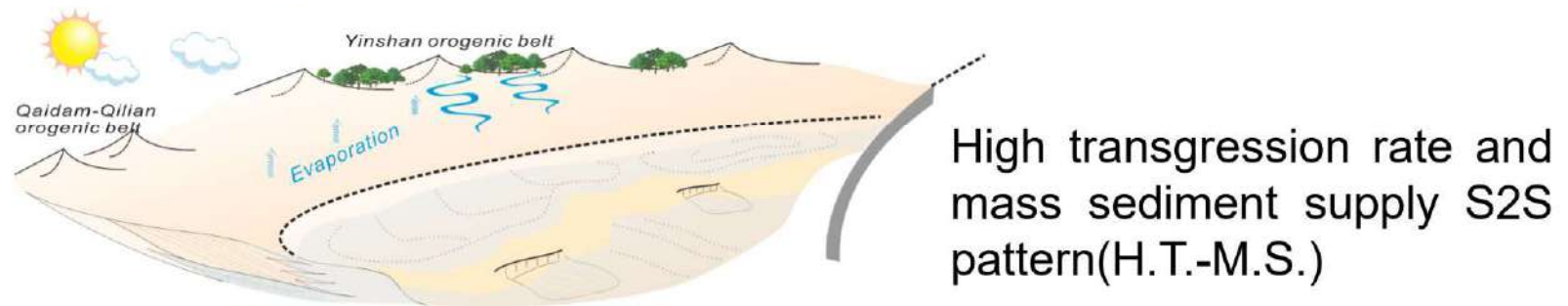
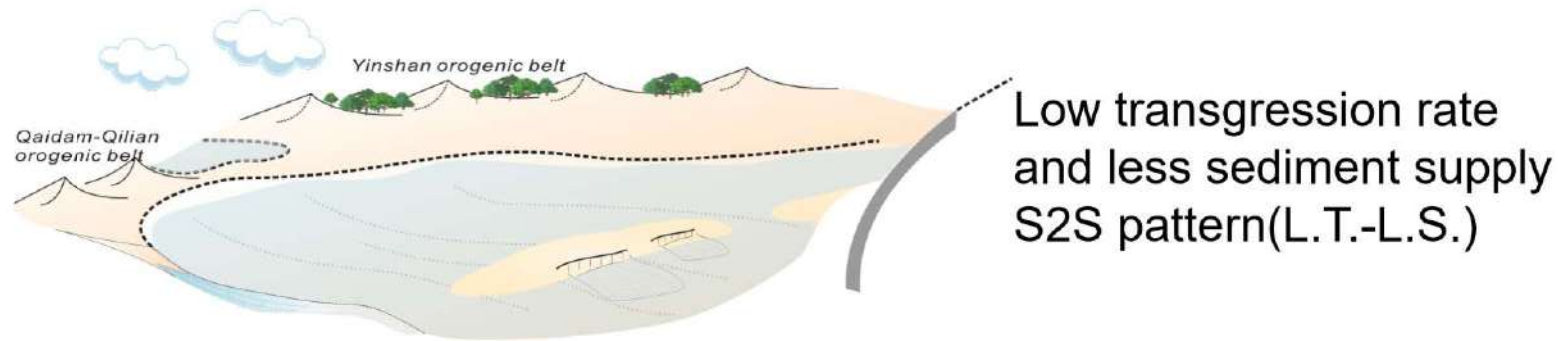
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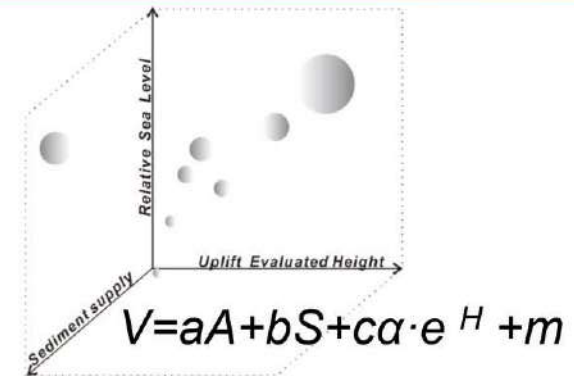
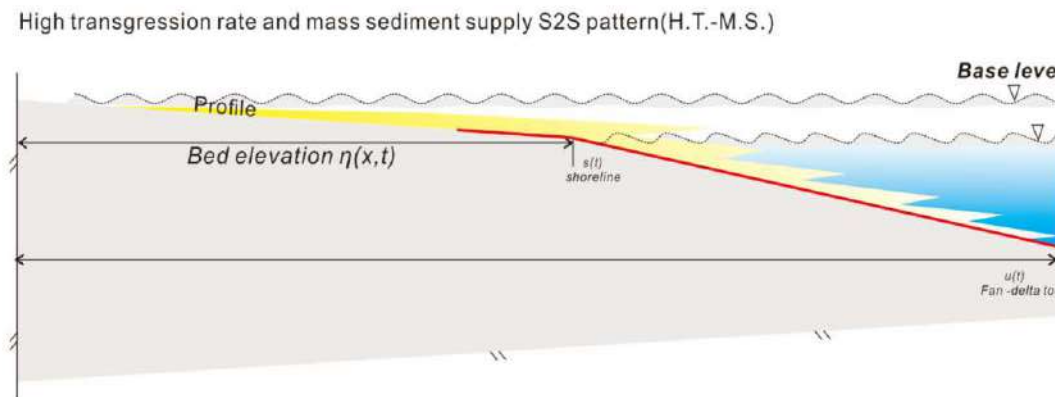
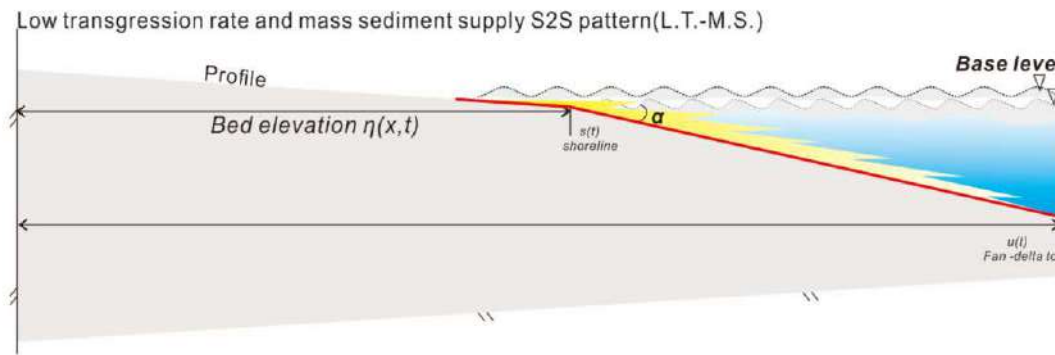
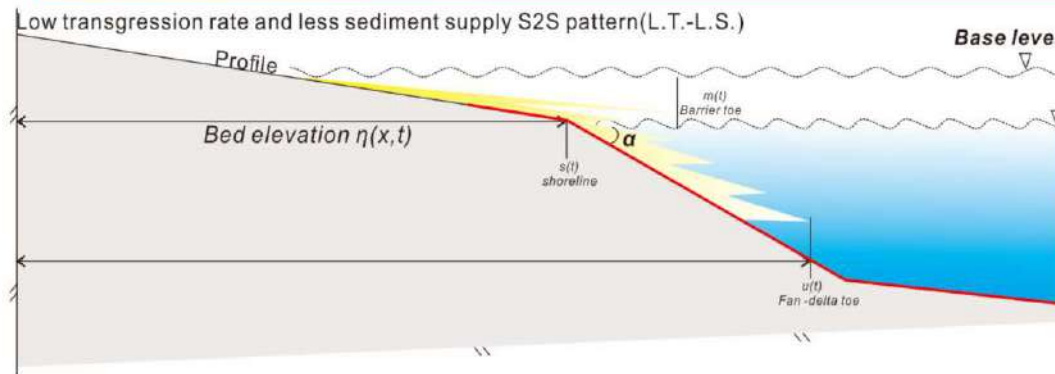


# Mechanism of Sea level fluctuation

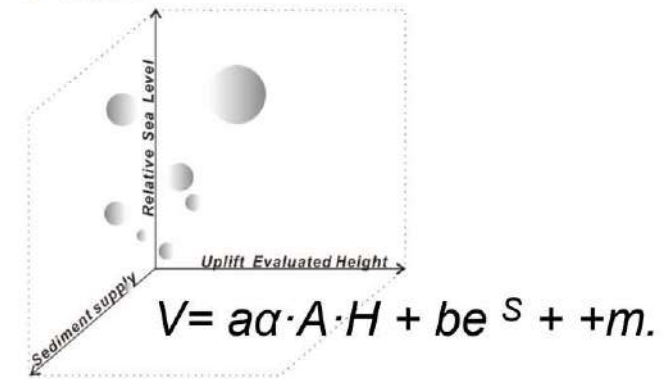


Low transgression rate and mass sediment supply  
S2S pattern(L.T.-M.S.)

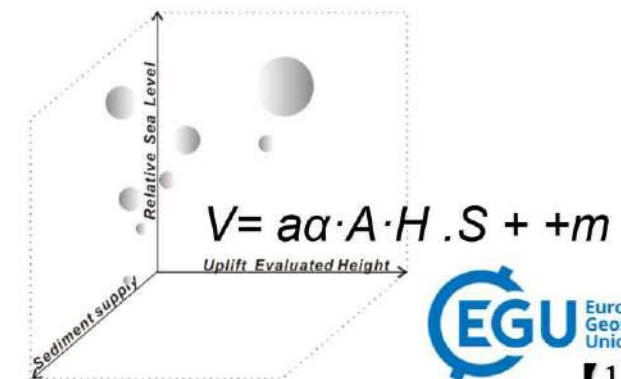
# Mechanism of Sea level fluctuation



c Sakmarian



b Asselian



a Pennsylvanian

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## **Conclusion**

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In L.T.-L.S. S2S pattern, as less sediment during the glacial period (Pennsylvanian), the transgression/regression process is dominated by the dip angle of the morphology. In this pattern, the intense of reworking flow determine the region area of coarse-grained sediments developed. As the S2S pattern transfer to the H.T.-M.S. or L.T.-M.S. S2S pattern, we speculate that the migration of the sediment distance is the key factor to determine the transgression/regression process. In these patterns, the intense of reworking flow determine the stack pattern of coarse-grained sediments developed yet.

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***Thanks for your attention!***