

## Summary Write Up of the DGAG Talk Tuesday 18<sup>th</sup> February 2025.

**Title:** America - West of the Rockies

**Speaker:** Martin Gledhill who previously gave a wonderful talk on New Zealand geology in Sept 2022 this time gave us a very interesting summary review of the geology “Wild Weather West” in the US and as promised Martin delivered a truly fascinating talk with many slide illustrations with humorous anecdotes. Unfortunately it is not possible to simply produce a PDF copy of the slides without the author to explain them and their context.

Below is my attempt at a summary from some rapidly scribbled notes, hopefully to whet appetites for future meetings. However, for those wishing a further “deep dive” into the subject the additional links listed below are a good start (Ed.):

The talk was a summary of the speakers observations in the western part of USA - the San Andreas Fault, Grand Canyon, a meteor impact crater, foothills of the Rocky Mountains with the remains of volcanoes, a thousand year old native American village on top of a mountain, rift valleys of the Basin and Range Province where the earth's crust has been so stretched that it is the thinnest anywhere on earth. Indeed is still stretching at 20mm/year according to GPS measureemnts. In the Western USA the plate boundaries are thousands of miles away from the coast. The speaker went through some of the latest theories that try to explain this and involved the pre-Pacific ocean plates; Farallon, Isanangi, Phoenix and the recently recognised biggest volcano in the solar system, previously just known as the Shatsky ridge!

Interesting notes during the talk that Trex fossils have only been found on the Palaeo-island ridge along the western boundary of the great inland sea covering North America during Late Cretaceous times.

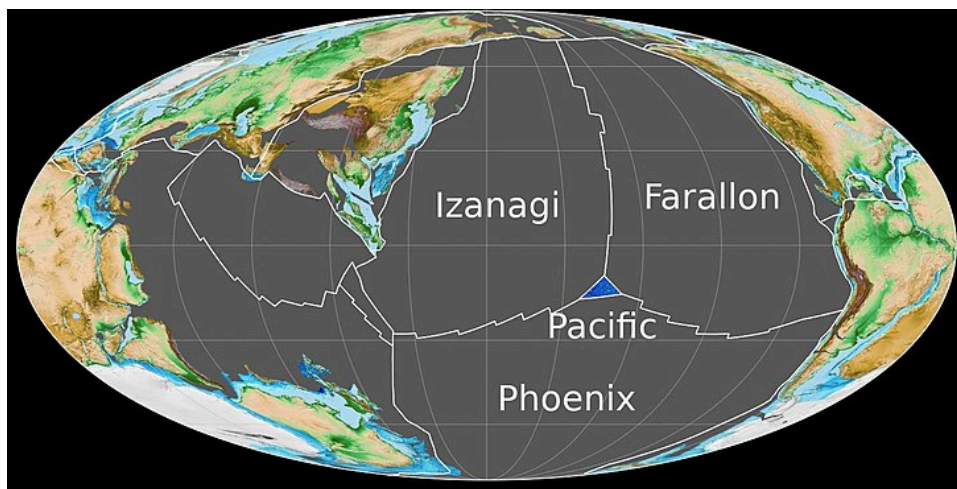


Photo Courtesy of Wikipedia

### Additional Links:

1. Plate Boundaries before the Pacific ocean  
<https://academia-lab.com/enciclopedia/jurasico/>
2. Shatsky Ridge  
[https://www.researchgate.net/publication/353276149\\_Plate\\_Boundary\\_and\\_Triple\\_Junction\\_Control\\_of\\_Shatsky\\_Rise\\_Formation\\_and\\_Implications\\_for\\_Other\\_Ocean\\_Plateaus](https://www.researchgate.net/publication/353276149_Plate_Boundary_and_Triple_Junction_Control_of_Shatsky_Rise_Formation_and_Implications_for_Other_Ocean_Plateaus)
3. Buttes and background starter  
<https://www.utahscanyoncountry.com/the-story-behind-monument-valleys-west-and-east-mitten-buttes/>
4. An introduction to Basin and Range Geology with neat animations and videos  
[https://www.iris.edu/hq/inclass/animation/basin\\_range\\_structural\\_evolution](https://www.iris.edu/hq/inclass/animation/basin_range_structural_evolution)