Where were you when…GEOLOGIC EDITION

The game of “where were you when”, but for geologic time. A basic knowledge of geologic history indicates that where something is now on the earth might not have been where it was, way back when. Let’s find out where West Virginia, with an easily identifiable and distinctive shape, was during some of Earth’s most notable “historic” events.

TARGET AUDIENCE:

* Those interested in geologic history
* Hope to stir some interest in geology and geologic history
* Even those who believe the earth began more recently could find the information interesting and entertaining and possibly provoke some study, research, and respectful dialogue.

KEY POINTS:

* There is more to the rocks below our feet than just something to hold buildings up
* Geology can be both awesome and interesting
* Brief methodology of the plate tectonic model and procedure for map creation
  + GPlates is freeware that can be used to display shapefiles and data in geologic time. Model for this Story Map project is from Christopher Scotese. Imported a shapefile of West Virginia and anchored to his model and projected it “back in time” to various periods. Exported a snapshot out of Gplates, along with present day country outlines, and then imported into ArcGIS online (or Pro) to overlay onto present day maps/layers of interest.
  + Note paleogeography of the time for West Virginia for each time snapshot

LAYOUT/INVENTORY:

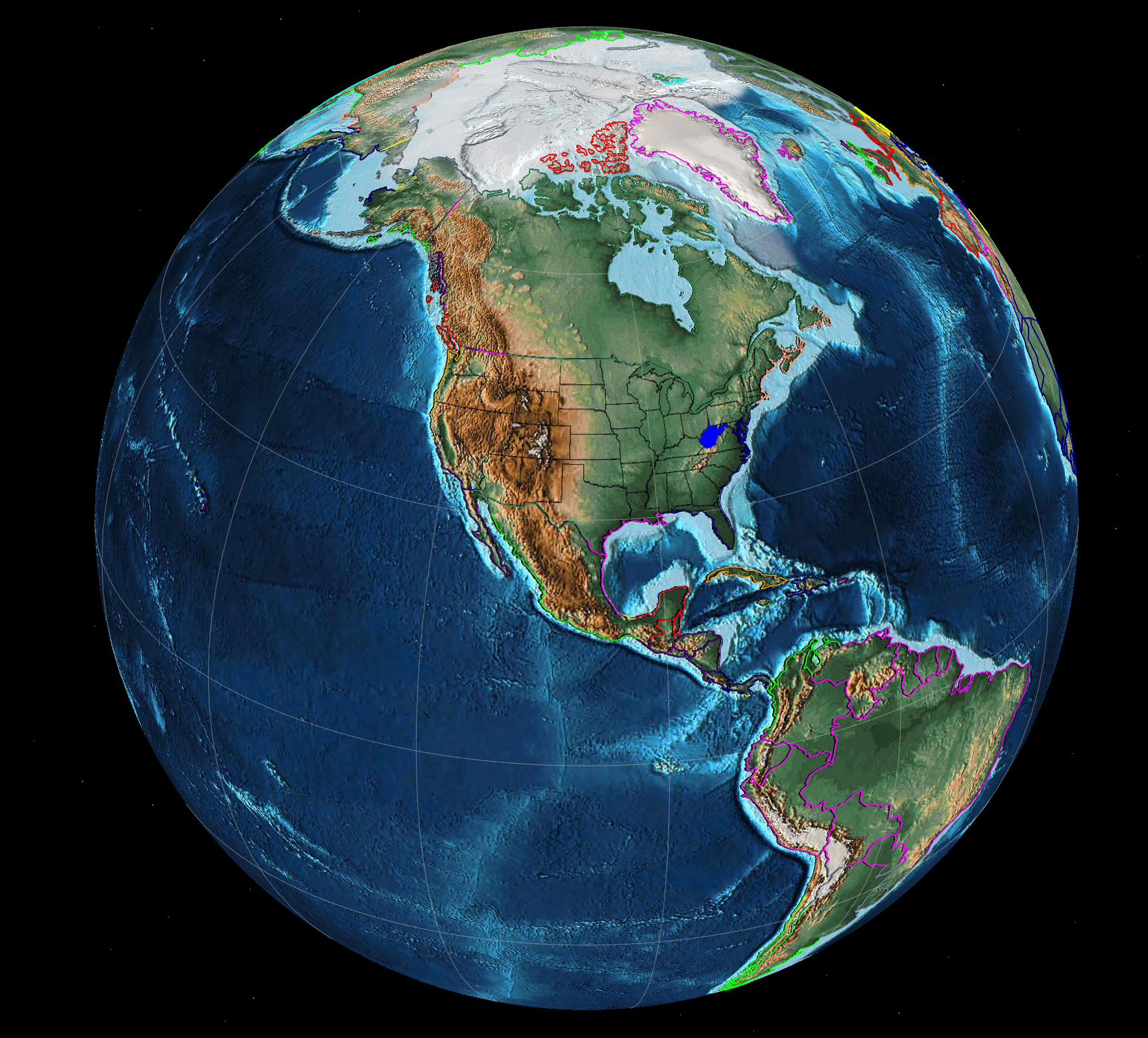
* Introduction with geology timeline from USGS
  + <https://pubs.usgs.gov/gip/geotime/time.html>
  + Methodology
* Snowball Earth (640 MYA) map
  + What was Snowball Earth? Or Slushball Earth?
    - Two episodes
  + Include image of Snowball/Slushball Earth (<https://www.nsf.gov/news/news_summ.jsp?cntn_id=116410>)
* First fish (505 MYA) map
  + [Metaspriggina walcotti](http://www.bioone.org/doi/abs/10.1666/06-130.1)
  + Include image of theorized image and fossils
* First land plants (500 MYA) map
  + Green algae 🡪 embryophytes (land plants)
  + 

Relationship tree of Kingdom Plantae from Hermsen, 2019. Reproduced for educational purposes only.

* + Include image of theorized image and fossils
* Pangea (250 MYA)
  + What was Pangea? (<https://www.livescience.com/38218-facts-about-pangaea.html>)
* First mammals (225 MYA) map
  + Images and description of first mammals
* Jurassic Period (175 MYA) map
  + What creatures actually lived during the Jurassic? It wasn’t quite Jurassic Park…
    - <https://ucmp.berkeley.edu/mesozoic/jurassic/jurassiclife.html>
  + T Rex (67 MYA) map
* Chicxulub meteor strike (66 MYA) map
  + Include present day location map
  + Explain the event (<https://www.nationalgeographic.com/science/2019/09/last-day-dinosaurs-reign-captured-stunning-detail/#close>)
  + K-T Boundary (<https://www.universetoday.com/39801/k-t-boundary/>)
* Earliest humans (2 MYA) map
  + <https://humanorigins.si.edu/evidence/human-evolution-timeline-interactive>
* End with video capture of Scotese model from 1100 MYA to present
  + Youtube links to his additional videos (<https://www.youtube.com/channel/UCpwbImp13QTi4p1CaQJel1A>)

NOTES:

* Include links to additional resources for further study
* North up, always
* Don’t forget to explain things and keep it relatively basic
* Examples of Gplates model below



West Virginia (blue) in GPlates, with present day paleogeography and location (paleogeography and plate model from Scotese, 2016).



West Virginia (blue) projected back to 250 MYA (million years ago) with paleogeography for that time (paleogeography and plate model from Scotese, 2016). Continental United States (yellow) in current position.

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Story Map Links:

<https://storymaps.arcgis.com/stories/1e2f463083024d54b6be04e34569631f>

<https://storymaps.arcgis.com/stories/5920d21eb64f4ba49035f08c7524be7f>