

# TECTONICS OF FICTION

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A Member of the Pennsylvania State System of  
Higher Education

# COURSE DETAILS

- Cal U is a 4-year public university in southwestern Pennsylvania
  - PA “Coal Country” and major shale gas impacts
- Geology program
  - About 70 majors, plus Earth Science Education
  - 1 tenured and 1 full-time temp faculty (we’re hiring!)
- EAS 427 – Tectonics
  - Upper-level elective and “Lithospheric” elective
  - Usually taken in the junior or senior year
  - On a two-year rotation
  - Pre-reqs: Historical Geology
    - Strongly recommended: Structure, Mineralogy/Petrology, Sed/Strat

# OBJECTIVES

- Course Syllabus
  - Interpret the tectonic superstructure of the earth within the context of geologic time.
  - Analyze tectonic theories through an examination of their historical extension.
  - Characterize different orogenic styles by comparing major orogenic belts.
  - Evaluate the mechanisms and placement of orogenic belts in a spatio-temporal earth framework.
- Exercise Objectives
  - Understand the link between observation, evidence, and interpretation
  - Synthesize previous course knowledge to ascertain a reasonable, logical historical sequence of events for large scale landscape development



# EXERCISE DESCRIPTION

- Based on “The Geology of Middle Earth” by Scott Maxwell, Brigham Young University, 2005
  - Students choose a map of a fictional land or world, but can’t use Middle Earth (I have to approve their selection)
- Assigned during Week 1, Due Week 12 (out of 15)
  - Road Checks
  - Turnitin
  - Peer Evaluations
- Grading
  - 55% - Geologic correctness (Evidence supports interpretations)
  - 10% - Writing → Grammar, punctuation, etc.
  - 15% - Writing → Formatting, organization, visual appeal, etc.
  - 10% - Creativity
  - 10% - Participation (group grade/peer evaluations)

# STUDENT EXAMPLES

- Wonderful Wizard of Oz, by L. Frank Baum, illustrated by W.W. Denslow, 1900
- Avatar: The Last Airbender, animated series by Michael Dante DiMartino and Bryan Konietzko, 2005
- Hyboria: (pictured), Conan the Barbarian, Robert E. Howard, map from Thomas Finch “Outline of Mythology,” 1913
- Westeros: A Song of Ice and Fire (Game of Thrones), George R.R. Martin, 1996



# EXAMPLE - THE LAND OF OZ

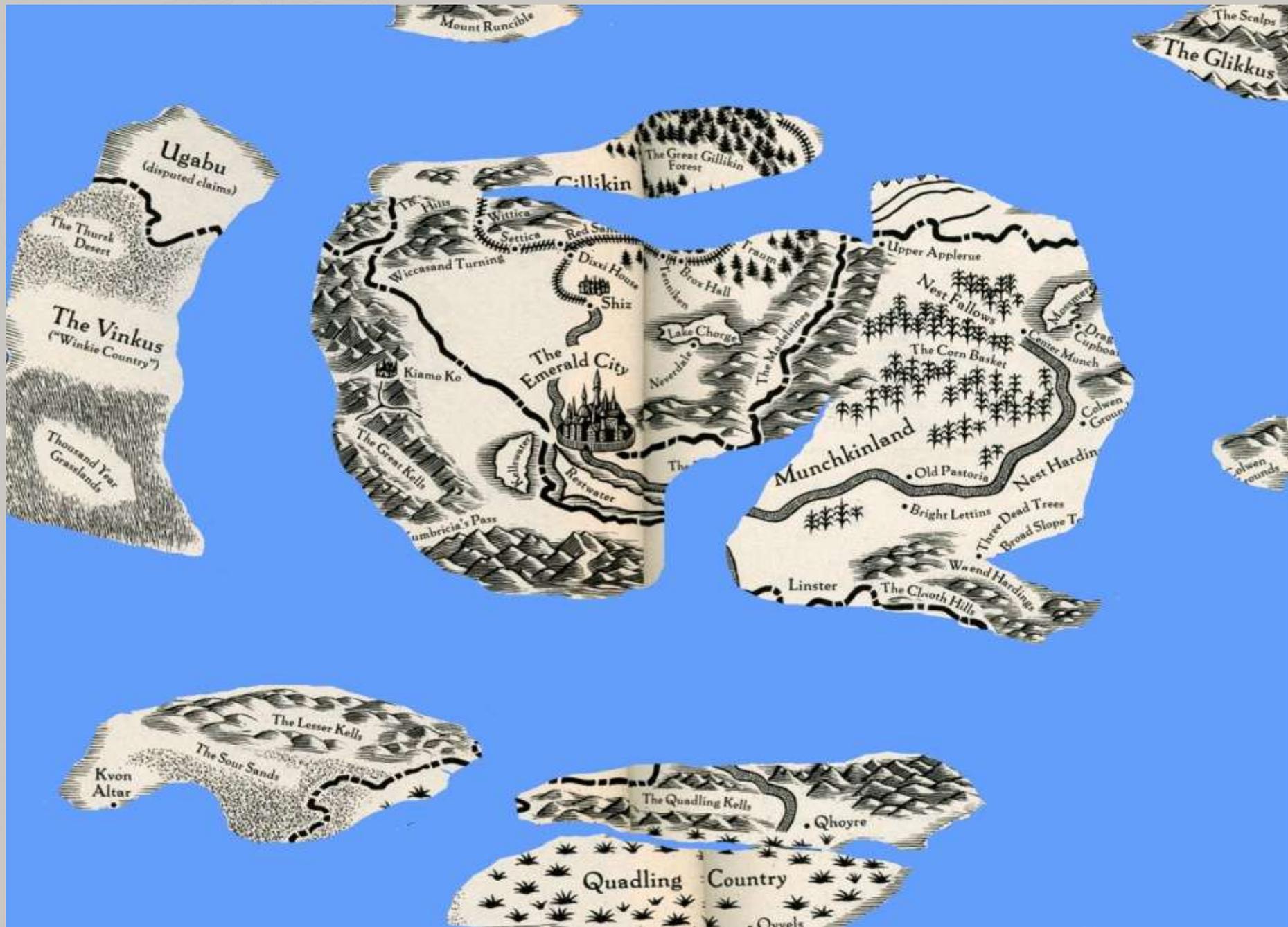


Geologic Time Scale

Era	Period	Epoch
Old World	Early	
	Late	
Middle World	Uniamalga	Paleocene
		Neocene
	375 Madamalga	Emecene
		Qualdecene
	200 Meridies	Keliocene
	Midecene	
	Finecene	
New World	Winkie	Vinkicene
		Preocene
	Virena	Runcicene
		Glikkucene
		Nonesticene

3.5 Billion  
500 Million  
70 Million



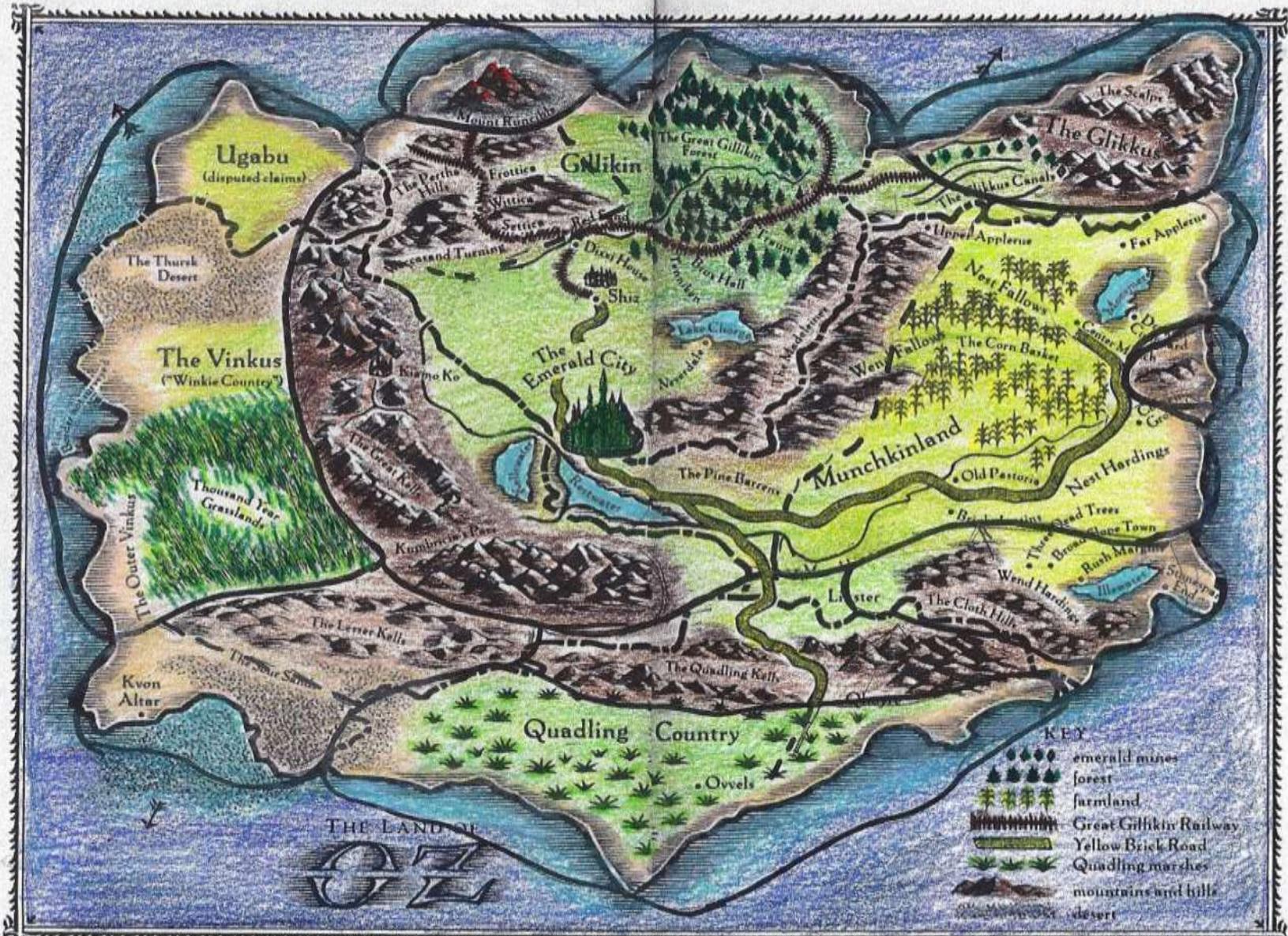






SW1  
Rise

SE1  
Set



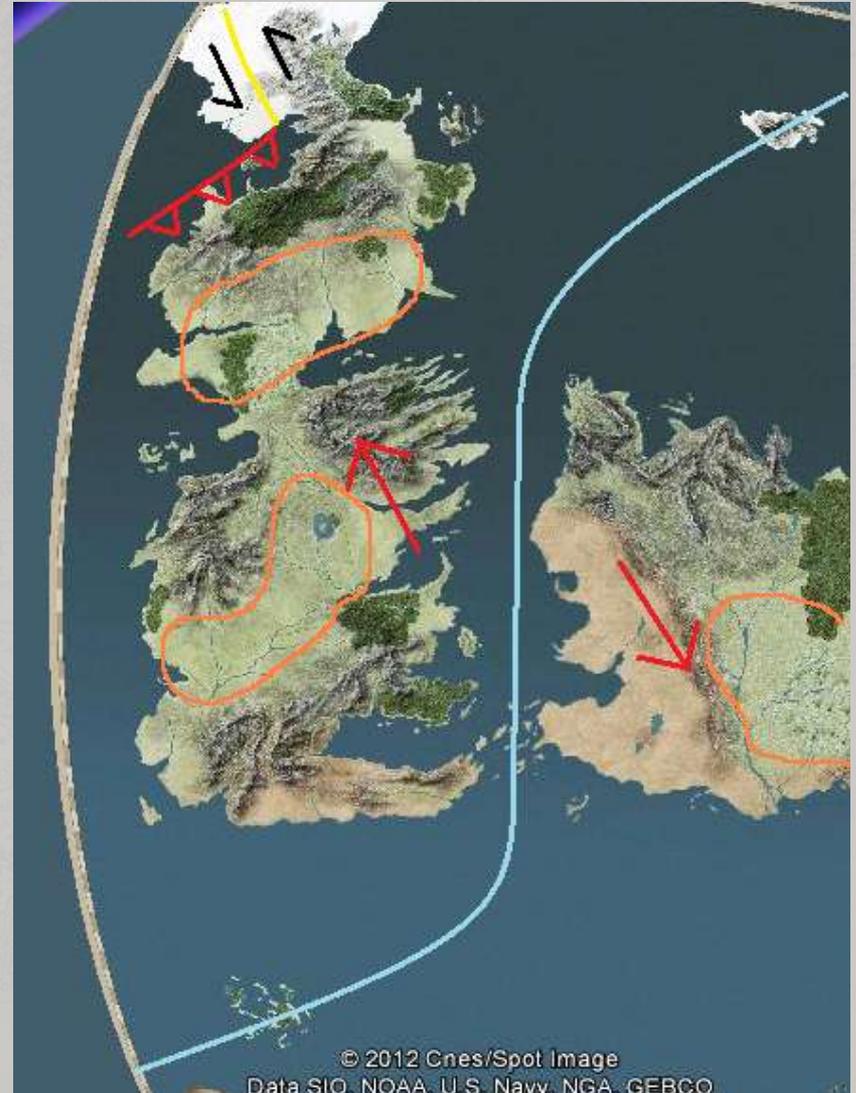
THE LAND OF  
**OZ**

- KEY
- emerald mines
  - forest
  - farmland
  - Great Gillikin Railway
  - Yellow Brick Road
  - Quadling marches
  - mountains and hills
  - desert

--- past plate boundaries  
— plate boundaries

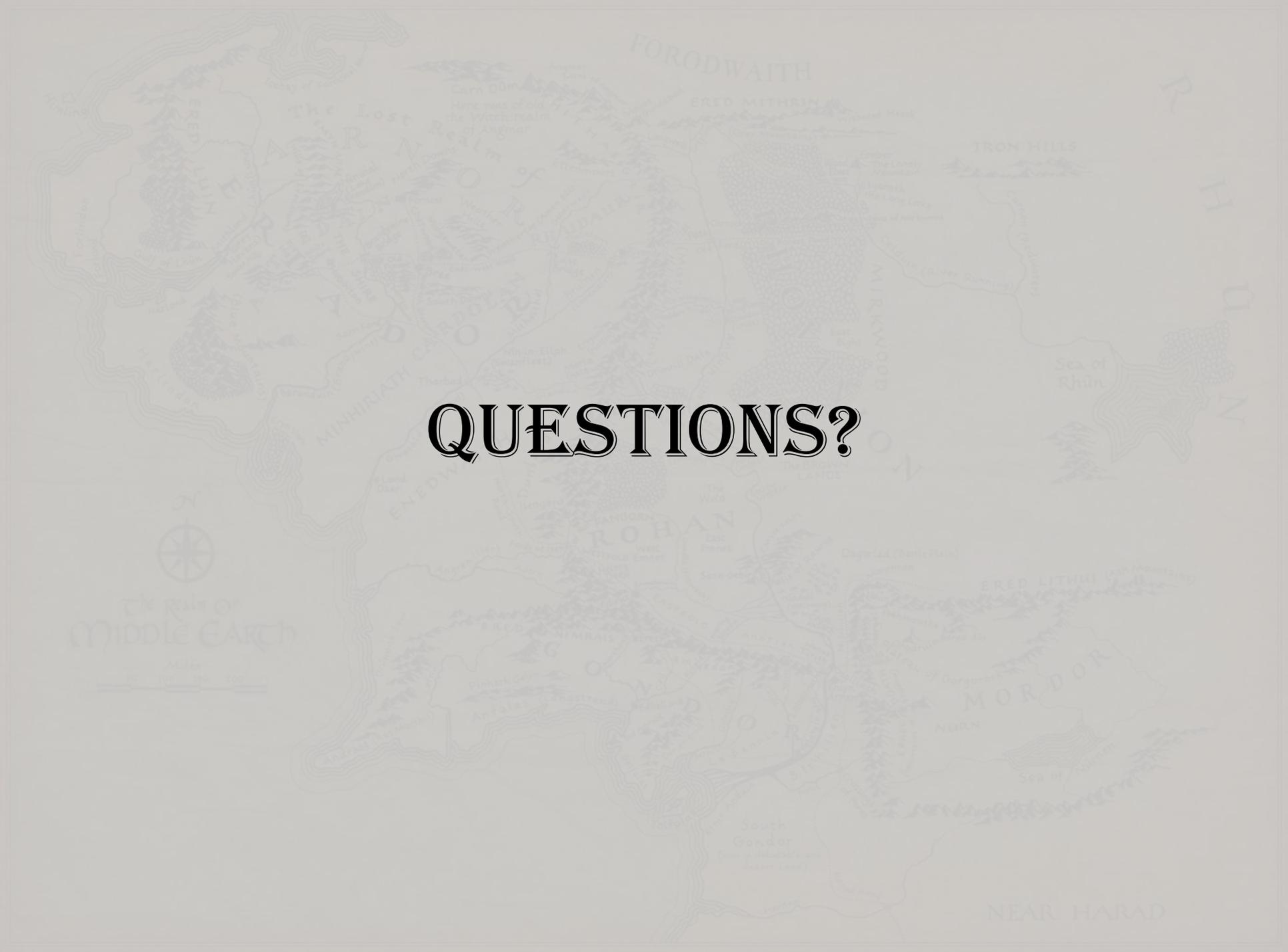
# BAD NEWS

- Logistical
  - Group work
    - Students hate it
    - External dynamics figure in to grades
  - Peer Evaluations generally don't work
    - I'll still use them, though
  - Procrastination
- Geological
  - “Bad groups” produce bad geology
  - Students “limit” themselves
  - Earth analogs are used, primary literature SHOULD be used



# GOOD NEWS

- Students LOVE it!
- Fantasy nerds RULE the day
- Creativity outside of geology works its way INTO students' geological conceptualizations
- Observation/Evidence/Interpretation skills are attained
- It is a nice change for me
  - Different students excel than is typical
  - More students excel
- VERY diverse submissions (aptitude, creativity, presentation)
  - Good and Bad



**QUESTIONS?**

The Realm of  
Middle Earth

Miles

0 100 200 300