

GEOL 02: Historical Geology  
Lab 13: Cenozoic

Name: \_\_\_\_\_ Date: \_\_\_\_\_

“Earth Through Time” Readings: p. 469-501 (Chap 15) p. 506-539 (Chap 16)

**Part I. Define the following terms:**

- Paleogene
  
- Neogene
  
- Tethys Seaway
  
- Flood Basalt
  
- Milankovitch Cycles

**Part II.**

- a. Provide the requested information for each of the Cenozoic events listed. This information can be found in Chapter 15 and 16 of the textbook. Write your answers on separate sheets of paper.**
- **Laramide Orogeny (begins in the Mesozoic)** - provide time, location, characteristics of deformation, and tectonic setting (what moved where).
  - **Initiation of the San Andreas Fault** – provide time, location, and plate motions that resulted in this change.
  - **Alpine-Himalayan Orogeny** – provide general time, location and plates involved.
  - **Basin and Range extension** – provide time, location, characteristics of deformation, and possible causes.
  - **Columbia River Basalts** – provide time, location, and description
  - **Uplift of the Colorado Plateau** – provide time, location, characteristics of the uplift
  - **Sierra Nevada Uplift** – provide time of major uplift and the type of faulting involved.
  - **Paleocene Eocene Thermal Maximum (PETM)** – describe what this means and time (in millions of years ago).
  - **Pleistocene Glaciation** – describe the climate conditions (fluctuations) of the Pleistocene. List the names and times of the four major Glacial stages. Describe a geologic feature that resulted from these conditions.

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**b. Life Events**

- **List at least three common marine invertebrate groups**
- **Appearance of modern bird groups** – provide time when most modern groups were present
- **Appearance of Ungulates** – provide the time and describe what animals (in broad terms) descended from the Ungulates
- **Appearance of Creodonta and Carnivora (flesh eating placental mammals)** – provide time and examples from this group.
- **Appearance of placental insectivores (shrew-like)** – provide time and significance to later mammals.

**Part III. Use the sheets of graph paper provided to make a time scale of the events and features you listed in section 2 of this lab.**

1. Your graph paper should extend from the Beginning of the Paleozoic (542 Ma) to the end of the Paleozoic (251 Ma). Note, that you will be adding events to the upper portion of your graph (359 to 251 Ma) after you complete the second part of the Paleozoic lab.
2. You need to devise a scale that fits this time span – how many millions of years will each block on your graph paper represent?
3. Plot the time scale as a column on the left side of the graph and leave room on the right.
4. To the right of each appropriate time, list the events and features described in the questions of 2a and 2b of this lab (Tectonic events, Rock Sequences, Orogenies, Life)
5. Provide short descriptions next to the events listed. .