

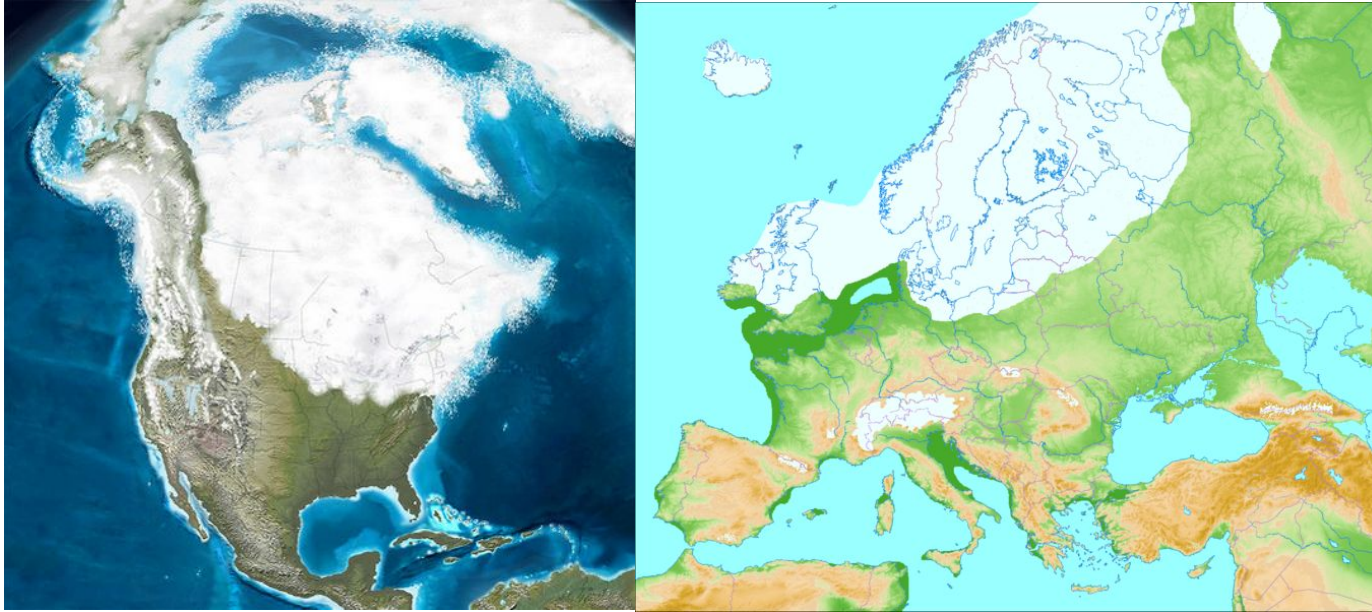
Orbital Cycles

Sloane Garelick



Climatematch
Academy —

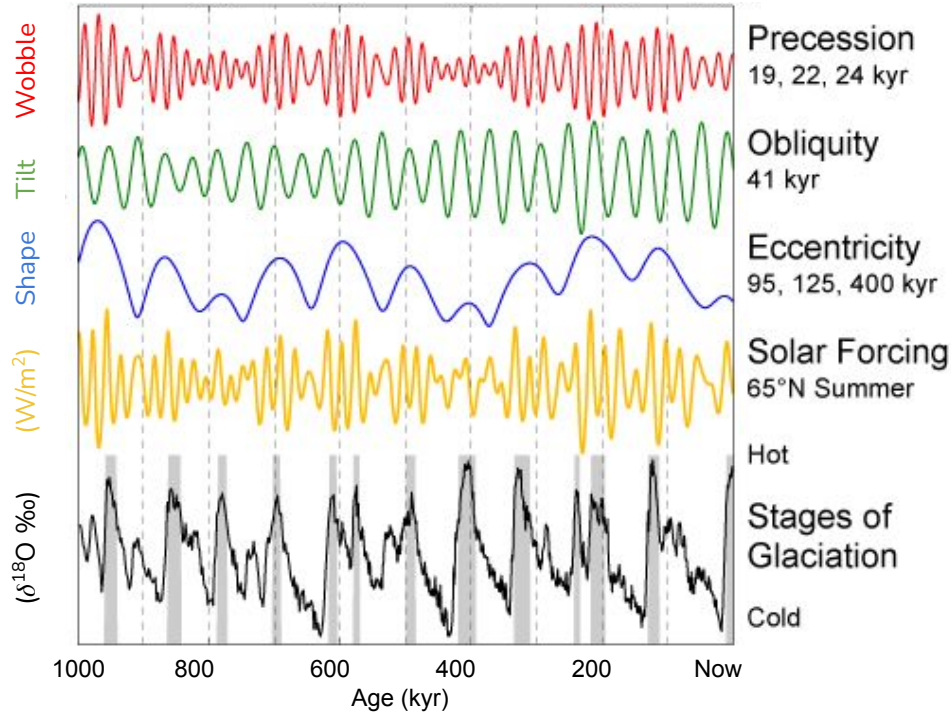
Orbital Cycles



(NASA, CC BY 2.0; Ulamm, CC BY-SA 3.0; NOAA, CC BY-SA 2.0)



Impact on Insolation and Climate



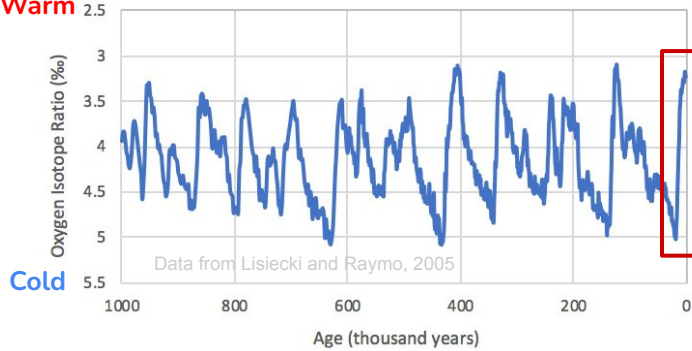
(Robert A. Rohde, CC BY-SA 3.0)

- Changes in the orbital cycles drive changes in insolation
- These long-term variations in insolation result in glacial cycles
 - **Interglacial:** more insolation, warmer climate, smaller ice sheets
 - **Glacial:** less insolation, cooler climate, larger ice sheets

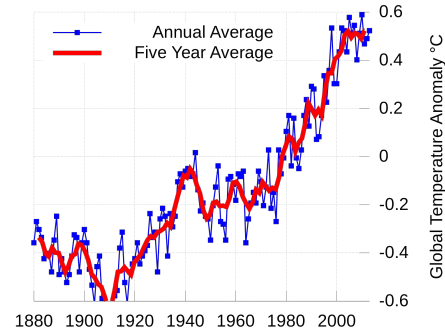
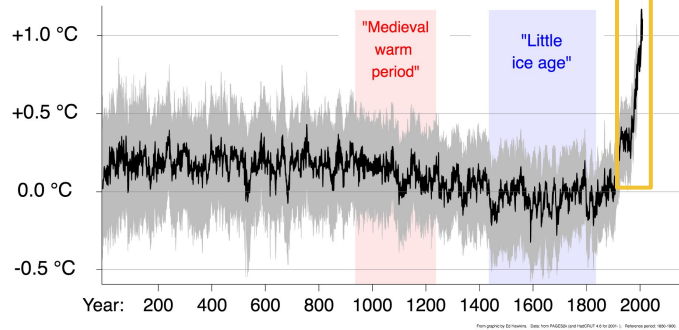
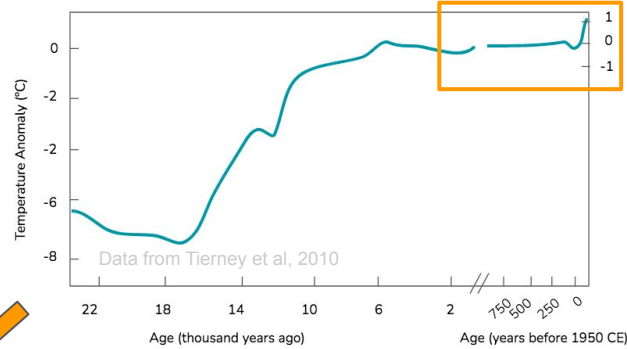


Historical Temperature Change

Warm



Cold



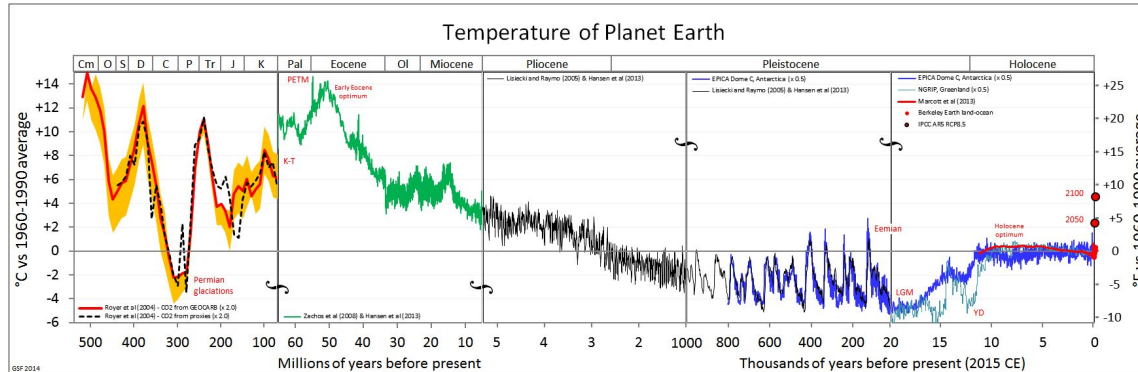
To understand the impact of recent and future warming, we need to assess the magnitude and rate of temperature change in the context of past climate

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Tutorial 6: Compute and Plot Climate Anomalies

- Comparing historical temperature change to temperature variations during past climate states can provide context for understand current warming
- Recent and future temperature change is often presented as an anomaly relative to a past climate state or historical period (e.g., 1960-1990 average in the graph below)
- In this tutorial, we'll compute and plot the global temperature anomaly over the past 20 years



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