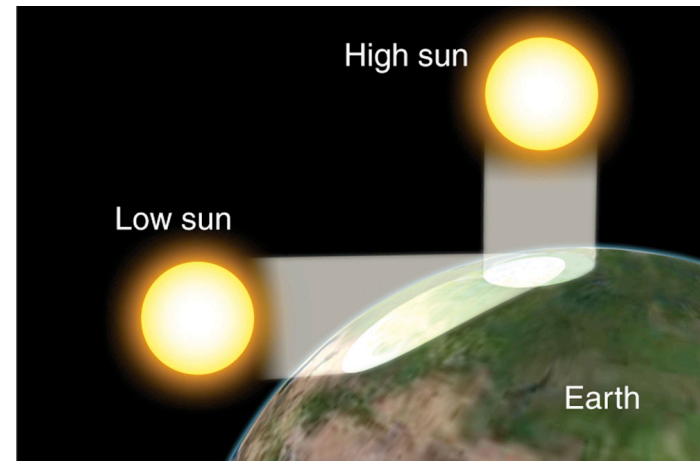


Periodic Temperature Cycles

- The Annual Average Equator-to-Pole Temperature difference
 - Due mainly to differences in Solar energy absorbed at the surface, which is mainly due to
 - Differences in *intensity* (energy per unit area) of insolation at the top of the atmosphere (2/3)
 - Distribution of clouds vs. latitude (more in midlats and polar regions, less in tropics) that reflect sunlight (1/3)
- The Diurnal (day-night) Cycle of Temperature
- The Annual Cycle of Temperature
- Maritime vs. Continental
- Odds and Ends
- Summary of Temperature Controls

Why are Tropics warmer than Polar Regions?

Ingredient One: Differences in the angle of Incidence of incoming insolation

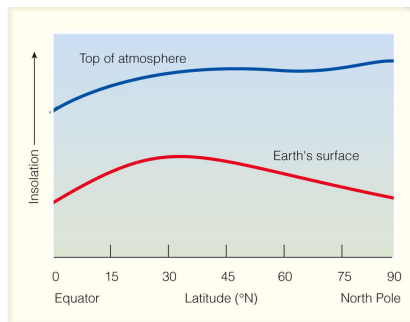


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Why are Tropics warmer than Polar Regions?

Ingredient Two: Latitudinal differences in objects that reflect energy back to space

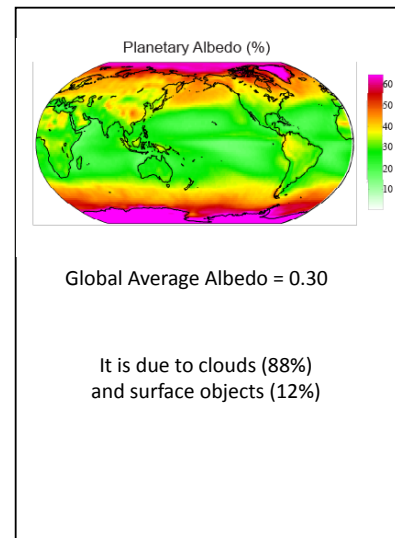
Northern Hemisphere Insolation on June 21



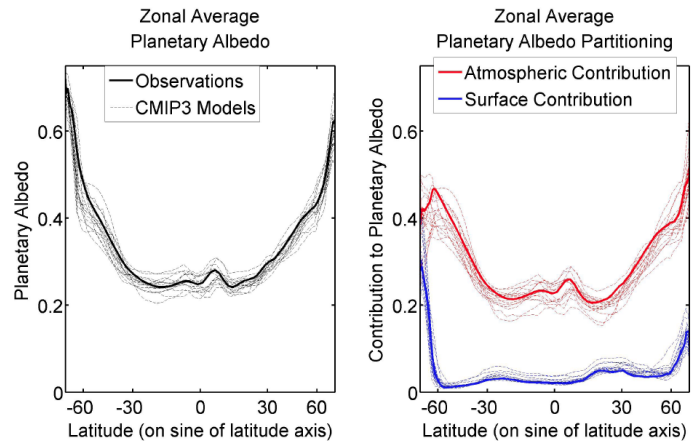
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The Earth's Albedo



Contributions of surface and atmosphere to the planetary albedo



(Zonal Average = average in the east-west direction)