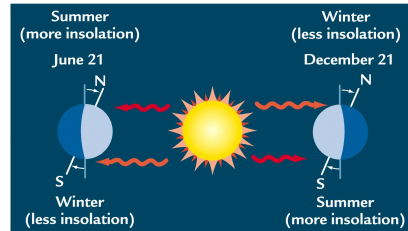
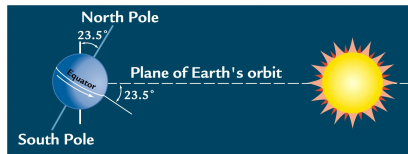


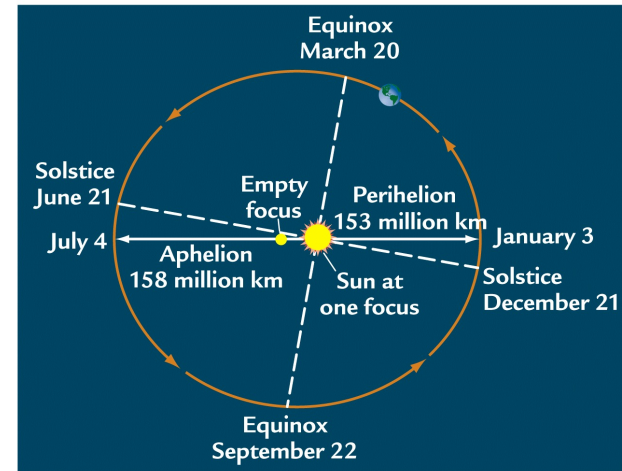
Orbital Variations and Insolation

Obliquity or Tilt

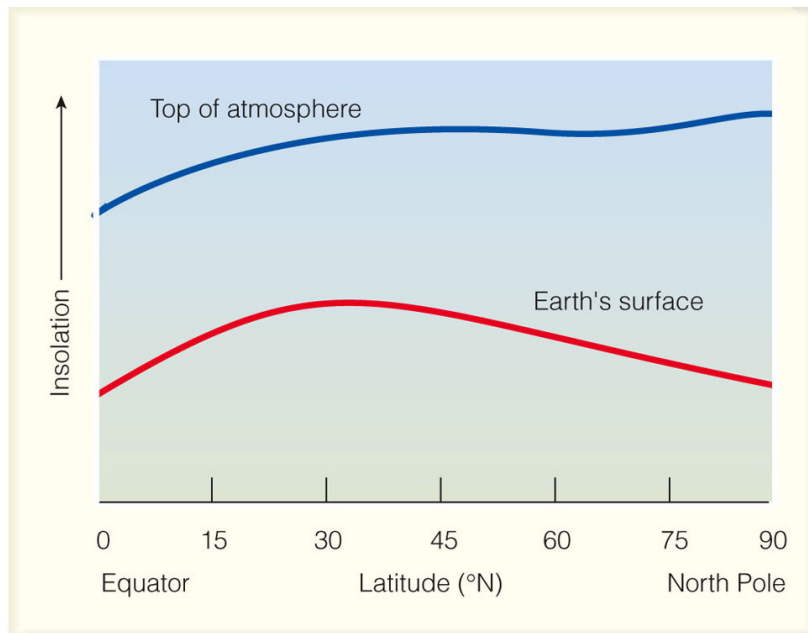
- Tilt angle is presently 23.44°
- Tilt is the main reason why we have large seasonal cycles in mid-latitudes and polar regions
 - More tilt, more extremes in seasons
 - No tilt, no seasons



Orbital Configuration Today

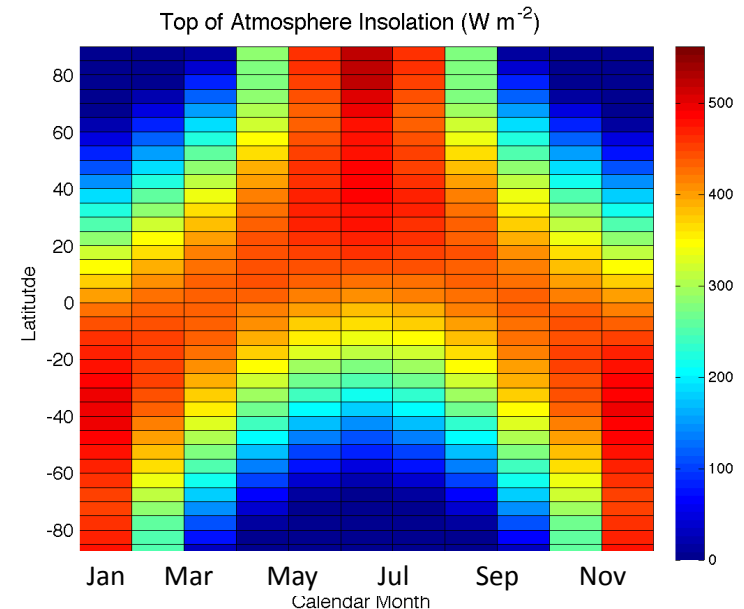


How many days between Equinoxes?

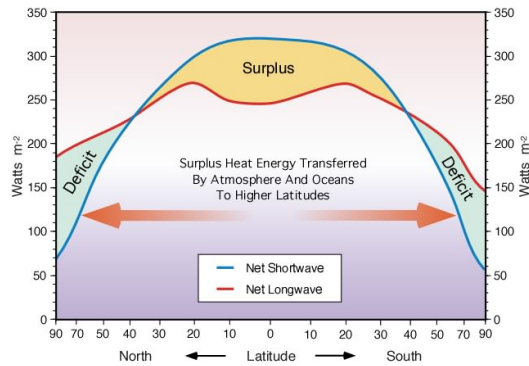


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Fig. 3-5, p. 58

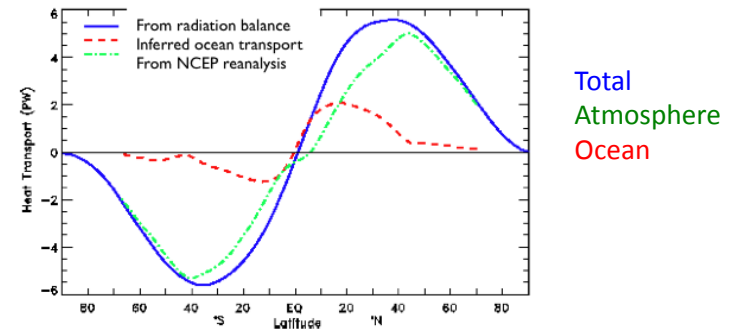


Annual Radiation Balance



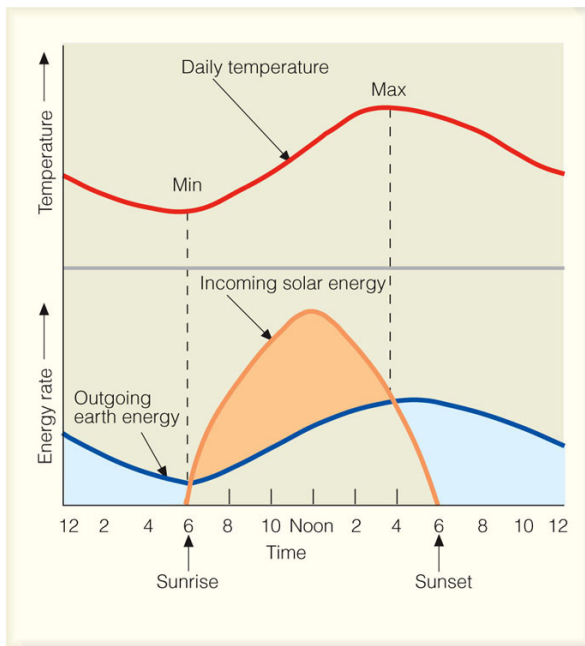
The meridional gradient in Absorbed Solar Radiation (ASR) drives circulation.

Northward Energy Transport



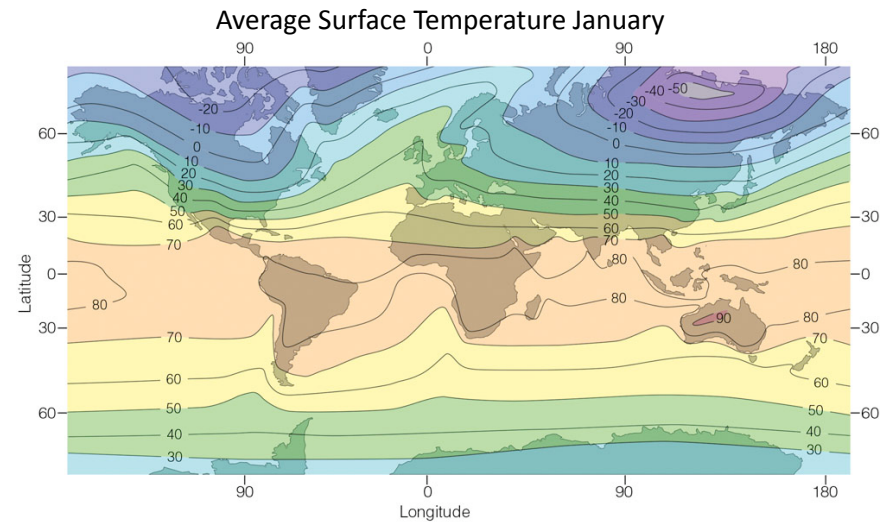
Ocean does most of the transport in the deep tropics (15°S-15°N)

Atmosphere does most of the transport poleward of 30°N,S



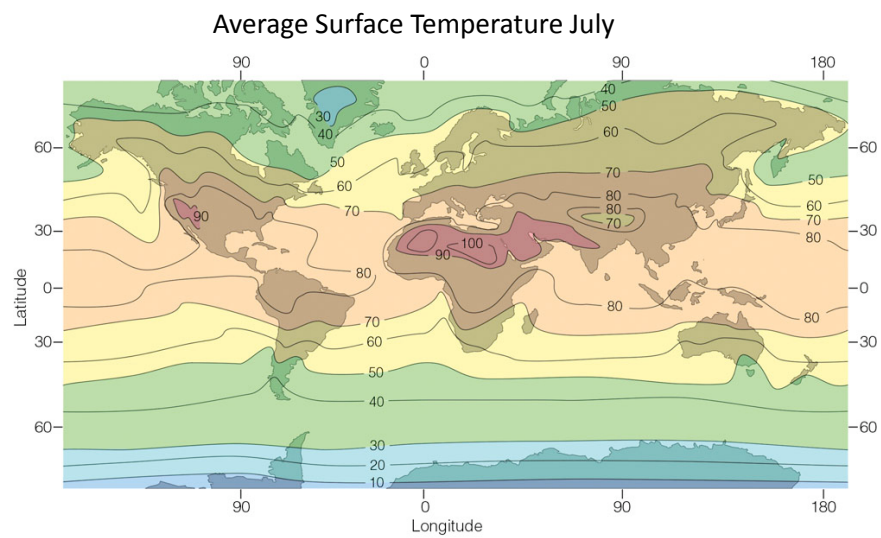
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Fig. 3-13, p. 65



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Fig. 3-20, p. 72



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Fig. 3-21, p. 72

