

The Seasons

◆ Objectives

- Why is the N Hemisphere warmer during some months and colder during others
- What about the S Hemisphere
- Don't take my word for it – Let's test it!

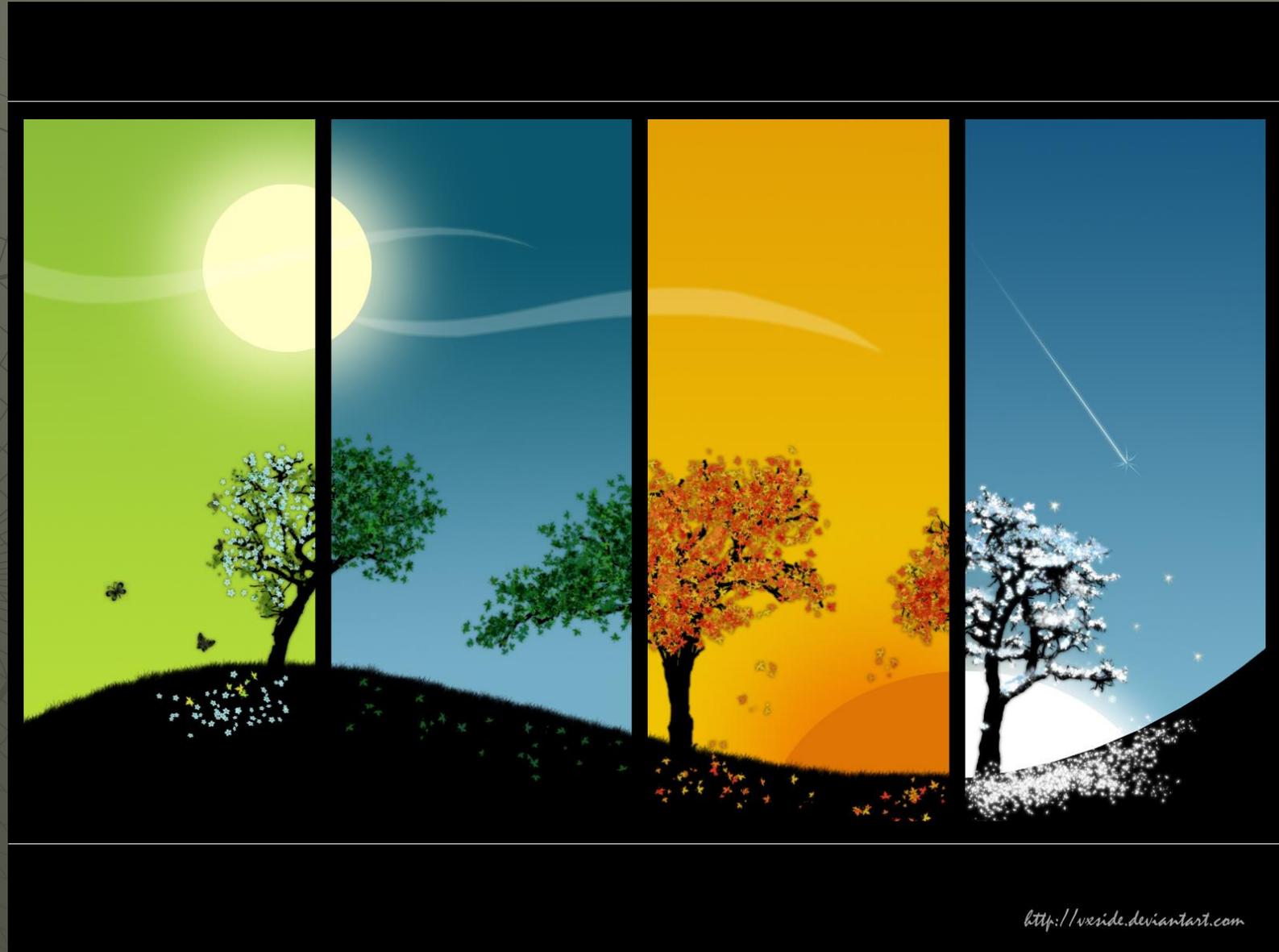
TPS

Q: The northern hemisphere experiences summer in July because ...

- A. that is when the Earth orbits closest to the Sun.
- B. the tilt of the Earth's axis causes the northern hemisphere to be closest to the Sun.
- C. the tilt of the Earth's axis causes long summer days and the Sun's rays to strike most directly.
- D. the northern hemisphere experiences the least cloud coverage, allowing in heat from the Sun.

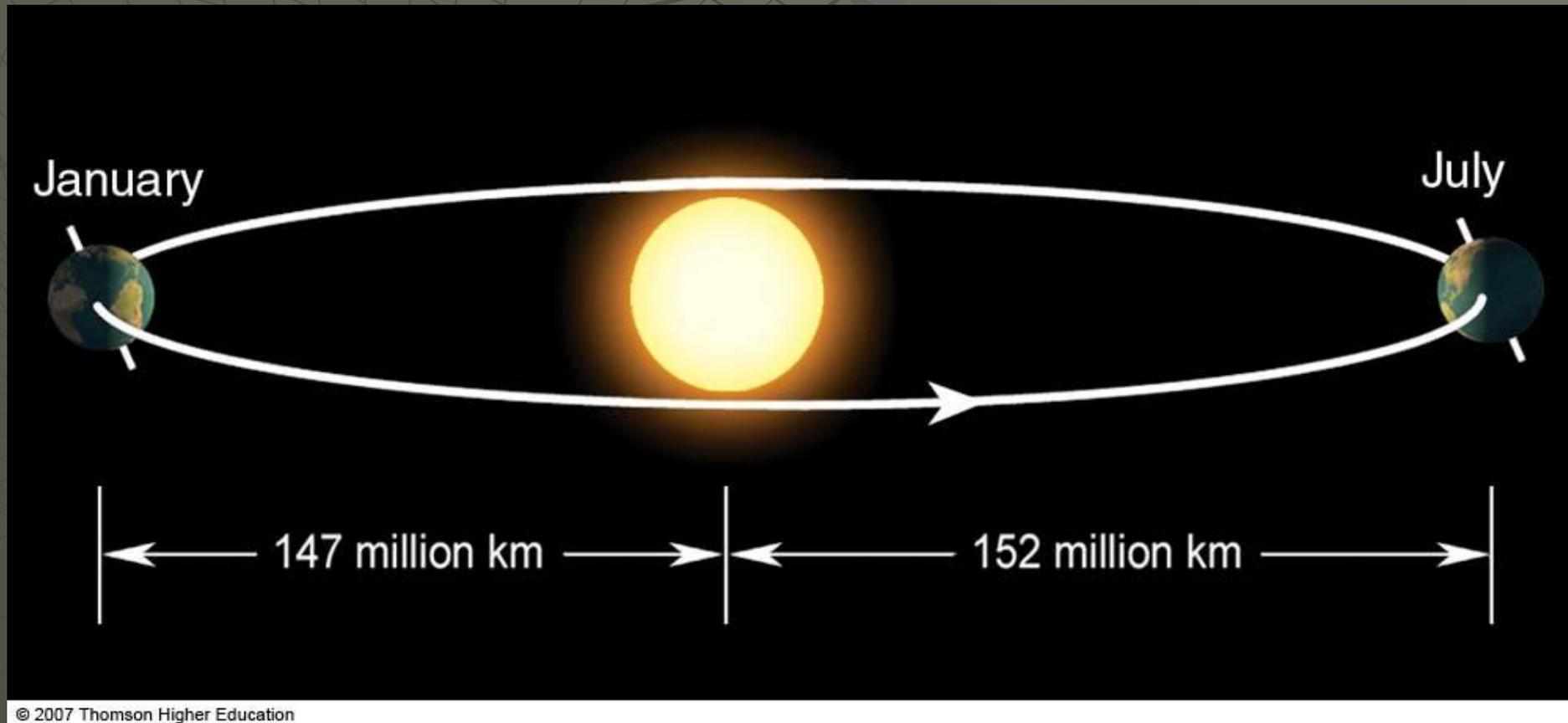
Seasons

- ◆ Why do we have seasons?
- ◆ Why is it colder and warmer during different parts of the year?
- ◆ Better question: Why is Laramie cold ALL the time?



Seasons

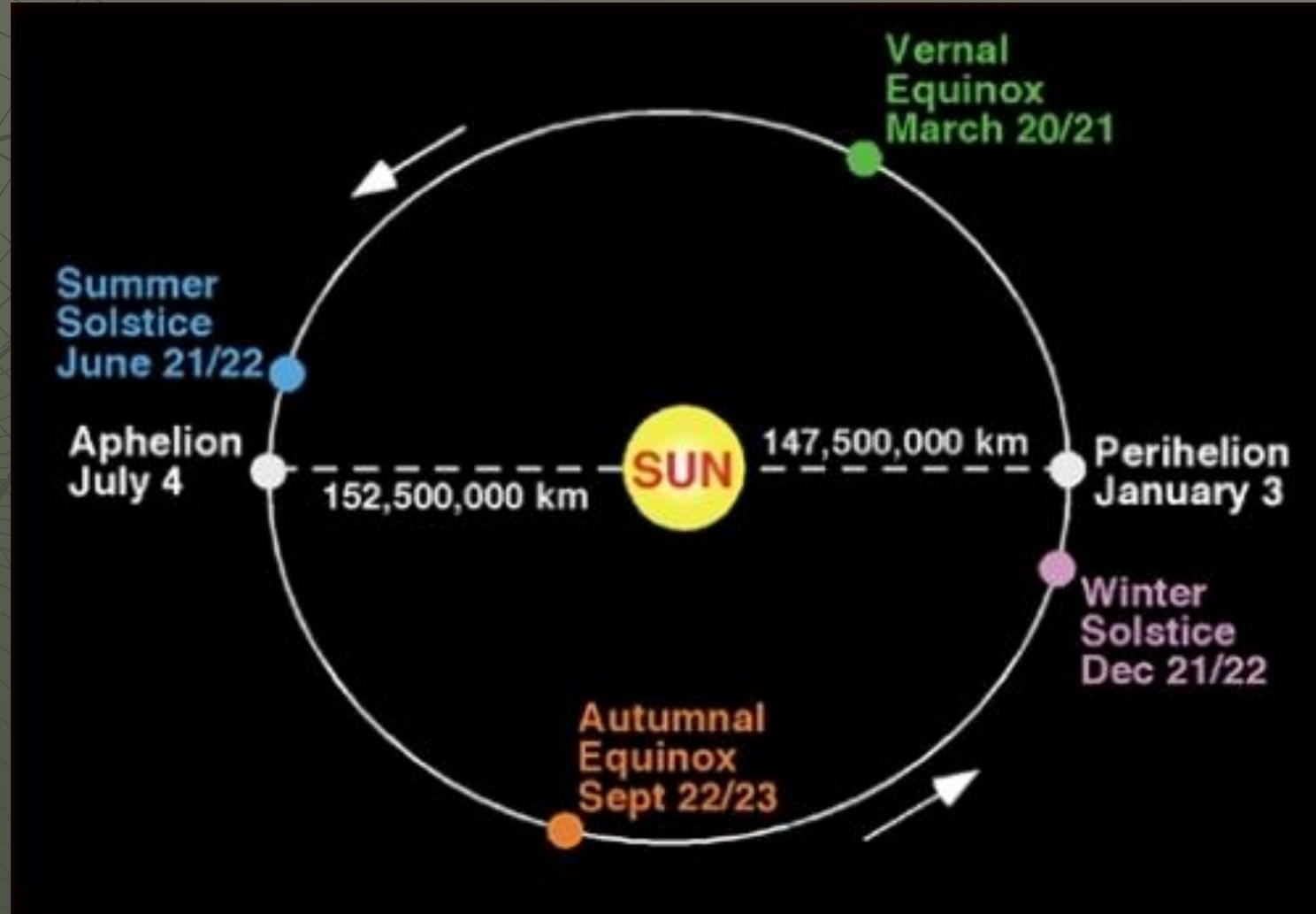
- ◆ Is it Distance?



When Is Summer/Winter

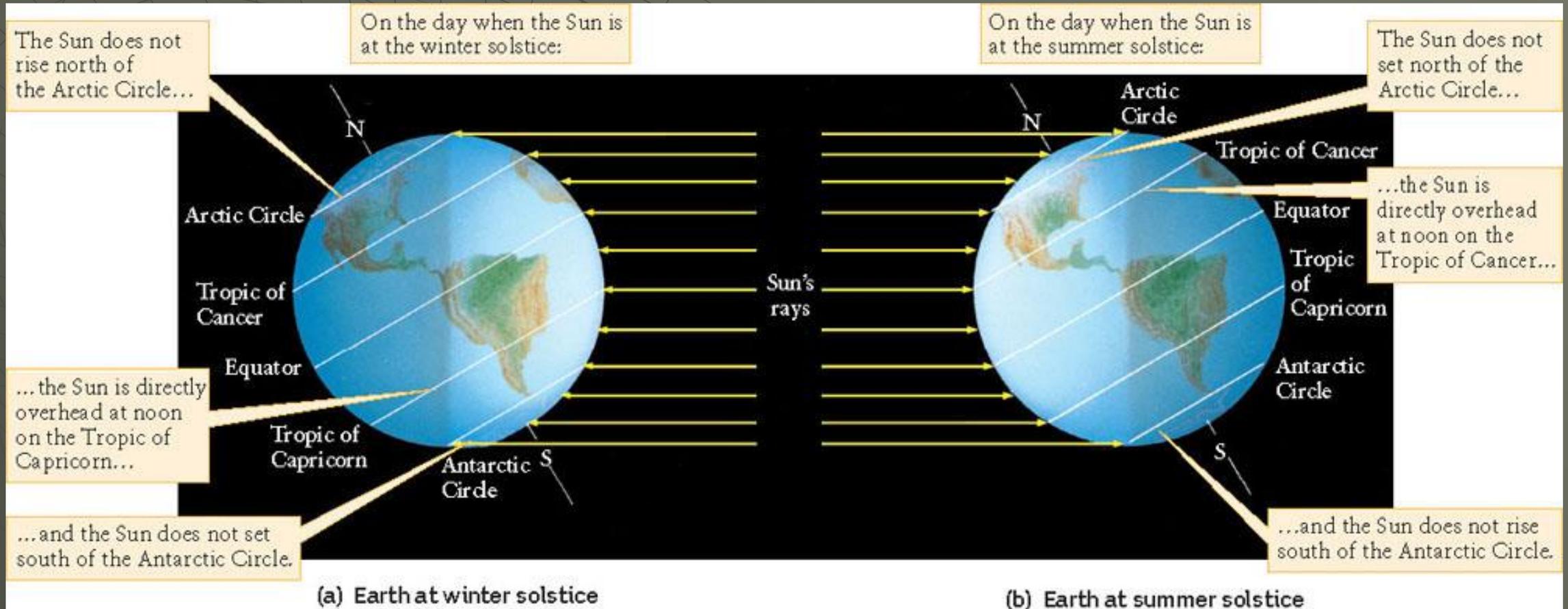
- ◆ Are winter and summer at the closest or furthest Point????

- **Earth's orbit is an ellipse!**
 - Next week (Kepler)
- **Aphelion:** Point in Earth's orbit which is closest to the Sun
- **Perihelion:** Point in Earth's orbit which is Furthest from the Sun



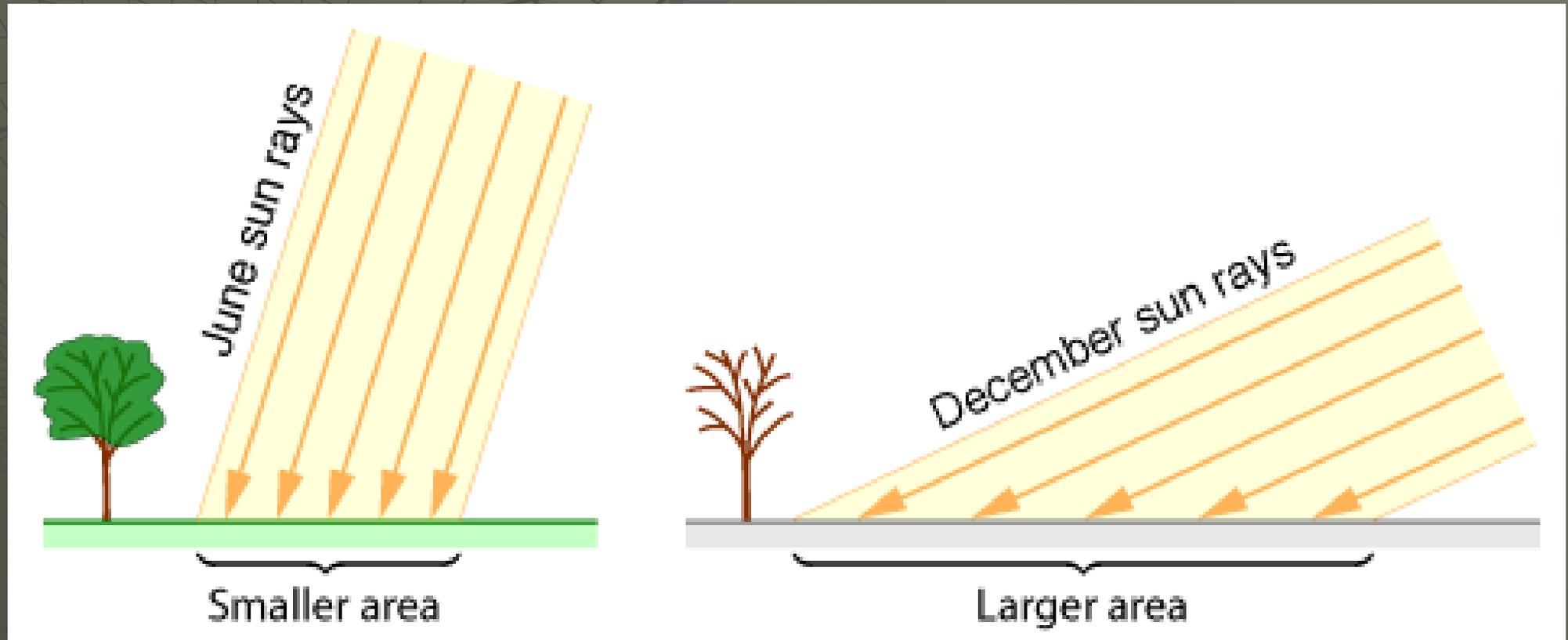
If NOT Distance, then What Causes the Seasons

◆ The Earth's Tilt!



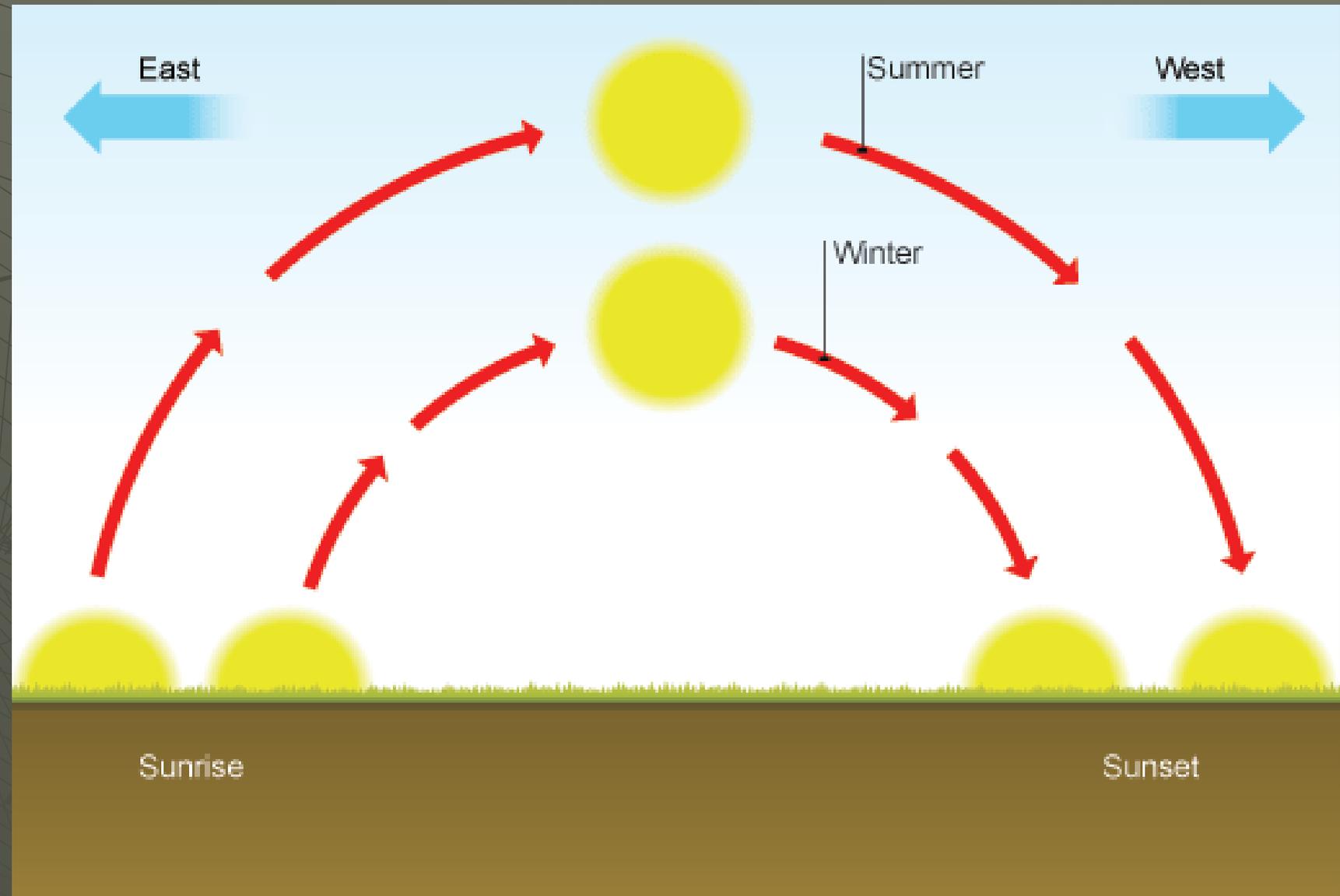
Physical Cause

- ◆ Different angles of light will cover different areas on the Earth!

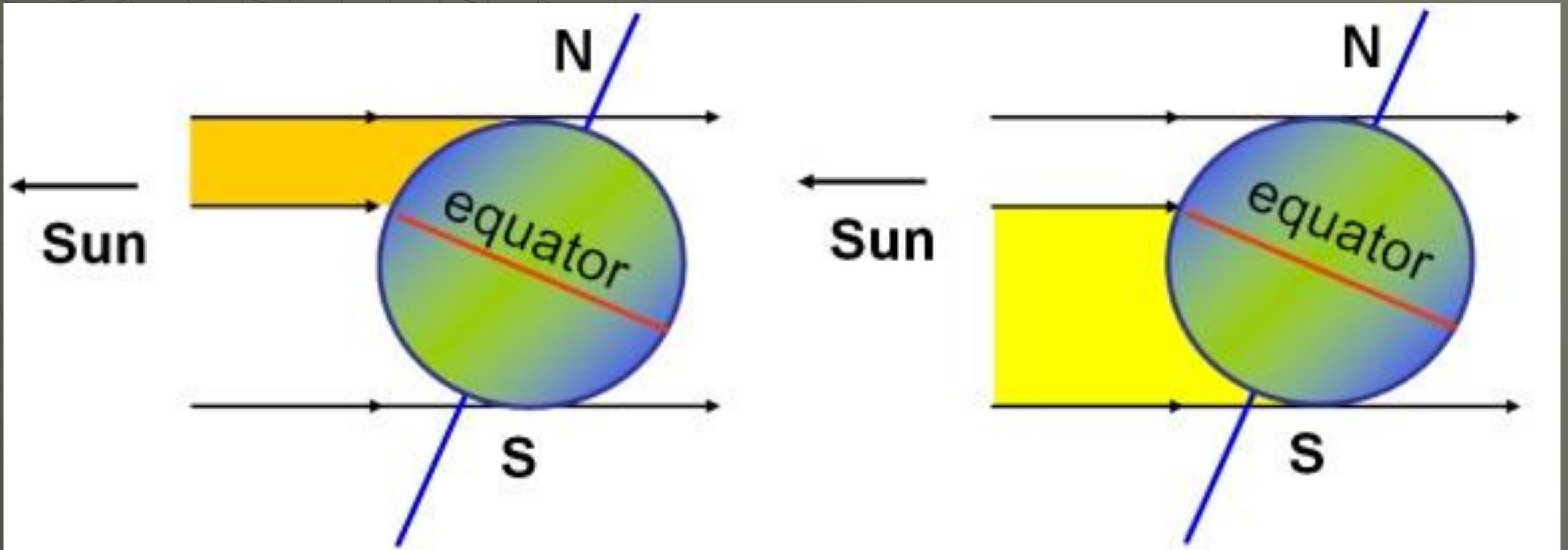


Sun's Path

- Higher latitude of the Sun = longer day

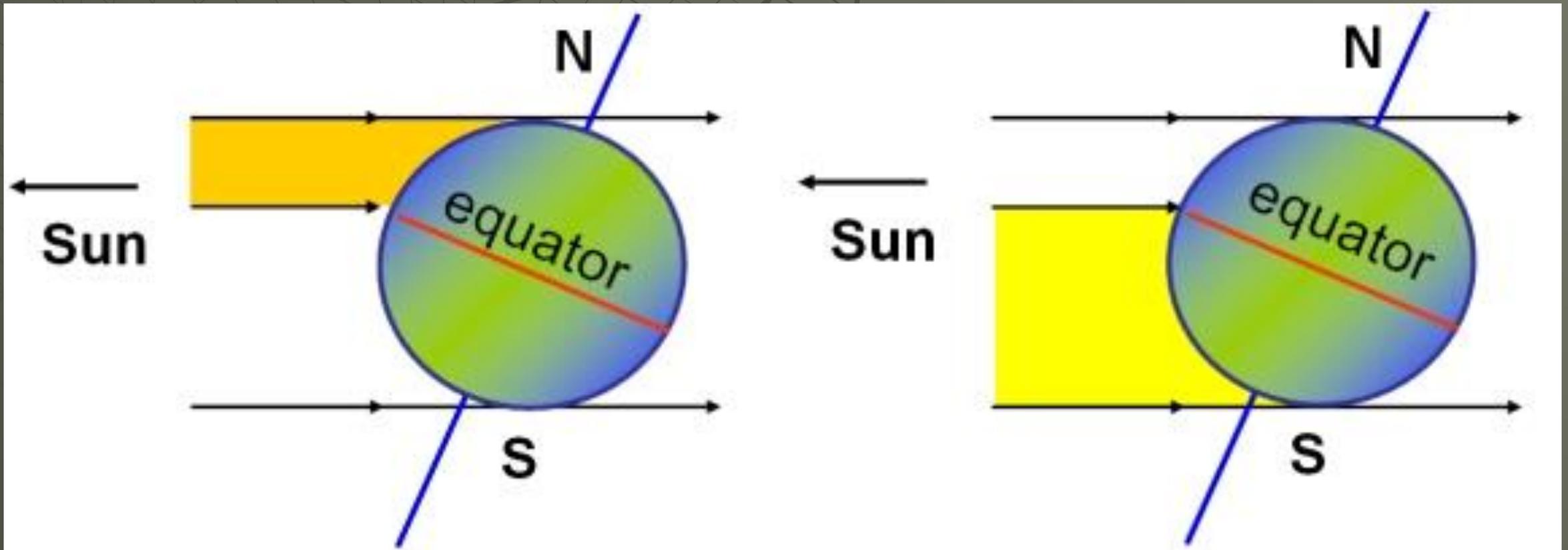


Another Look



Southern Hemisphere

- ◆ Do they even have seasons?
 - A: yes



Q: If the seasons were in fact caused by varying distance between the Earth and Sun, the seasons would be...

- A. Opposite in the 2 hemispheres
- B. The same in both hemispheres
- C. Unchanged
- D. Confusing

Q: A larger area which is heated by the same amount of light will have _____ temperature?

- A. A higher temperature
- B. A lower temperature
- C. An unchanged temperature
- D. The temperature of the Sun

Lab

- ◆ Angles of light activity (handout)
- ◆ Motions of the Sun