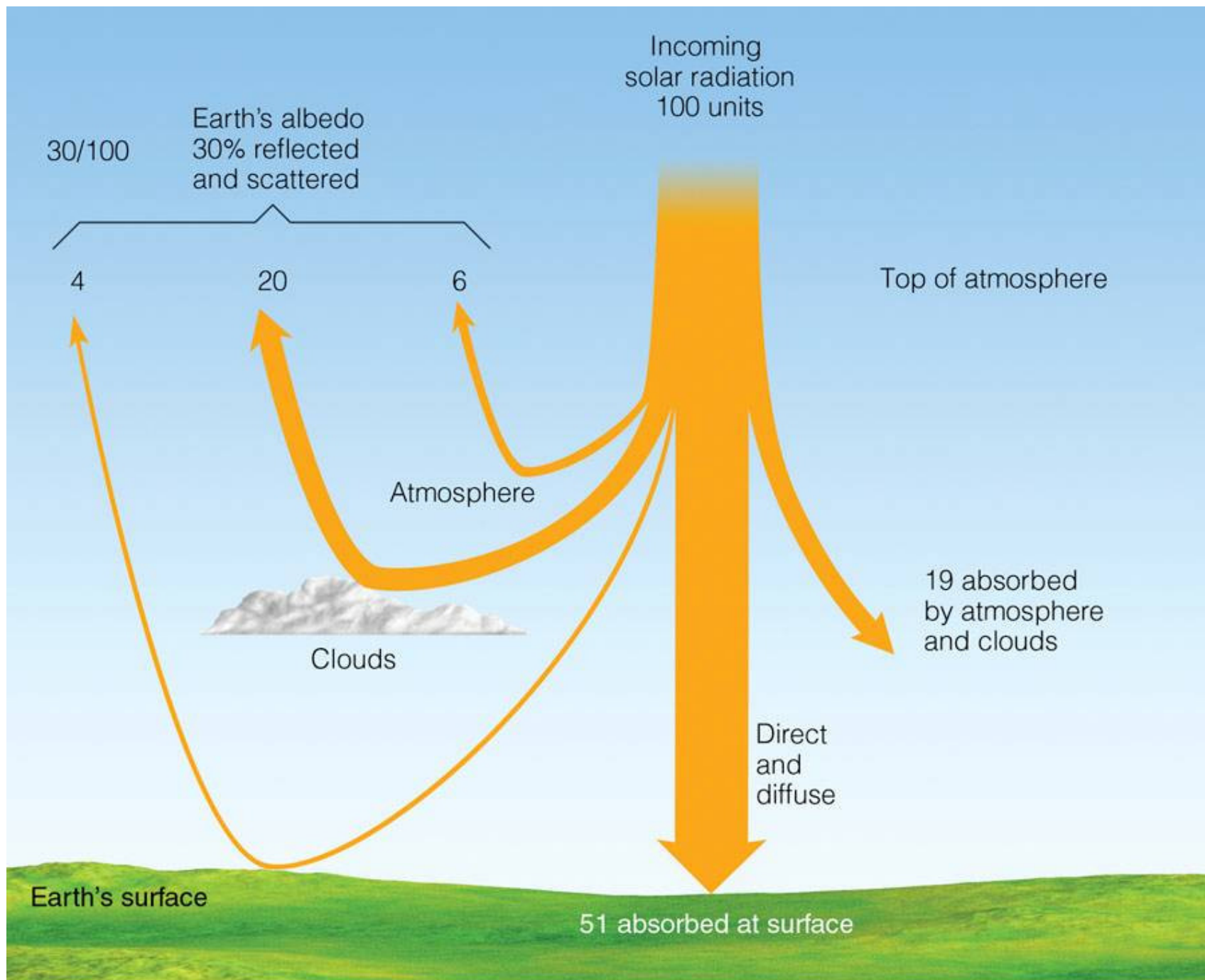


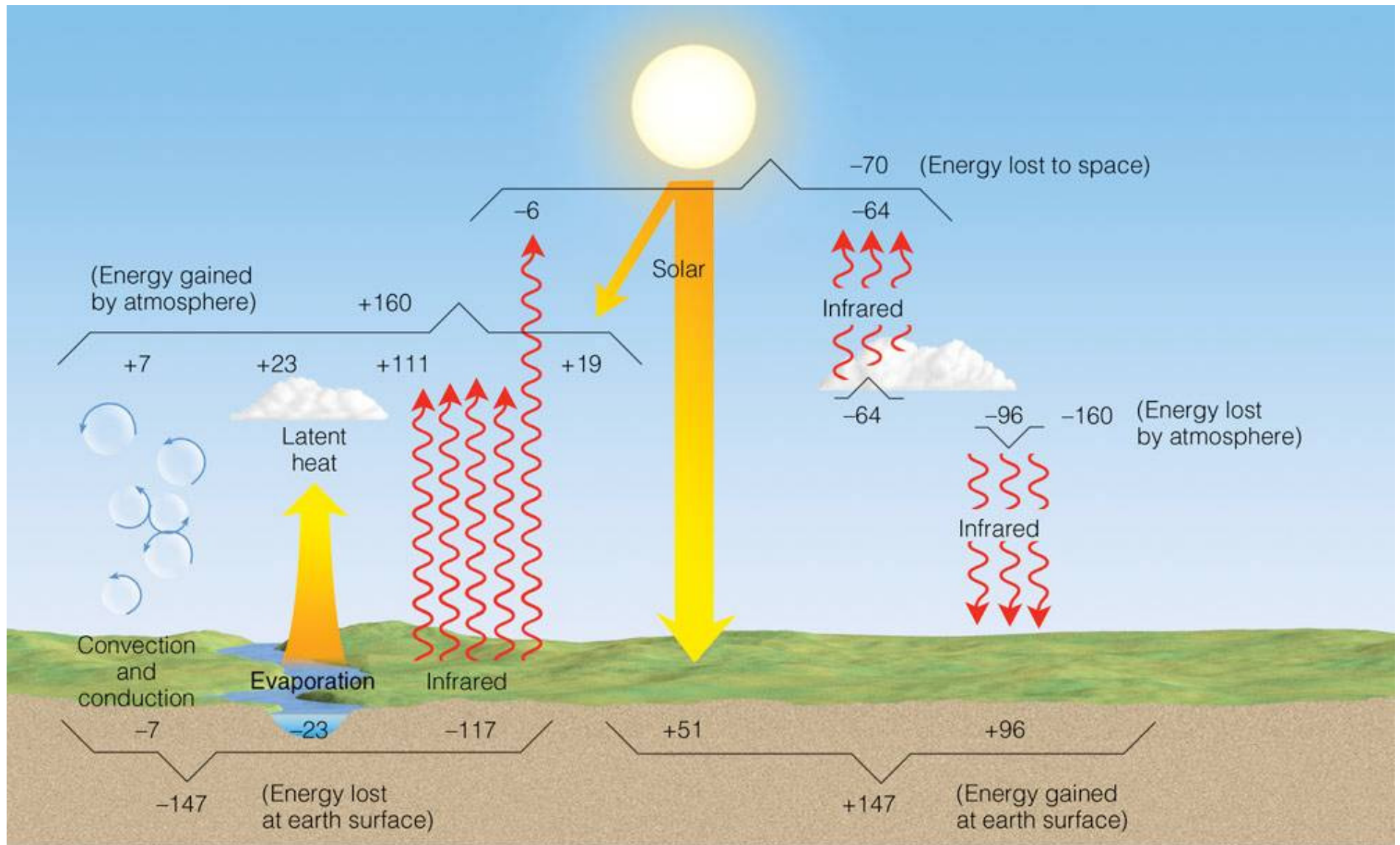
Review

- Greenhouse effect
 - What is it?
 - Is it a good thing?
- Clouds
 - Clouds in general provide a net cooling of our planet
 - Low clouds – net cooling
 - High clouds – net warming
 - What happens to clouds in a global warming scenario?

Earth Energy Balance

- The temperature of the earth stays the same (at least in the short term).
 - That means the earth and atmosphere must emit just as much as it absorbs
- The earth and the atmosphere must also have an energy balance
 - If not so, the surface temperature of the earth would change.
 - How is this balance maintained?





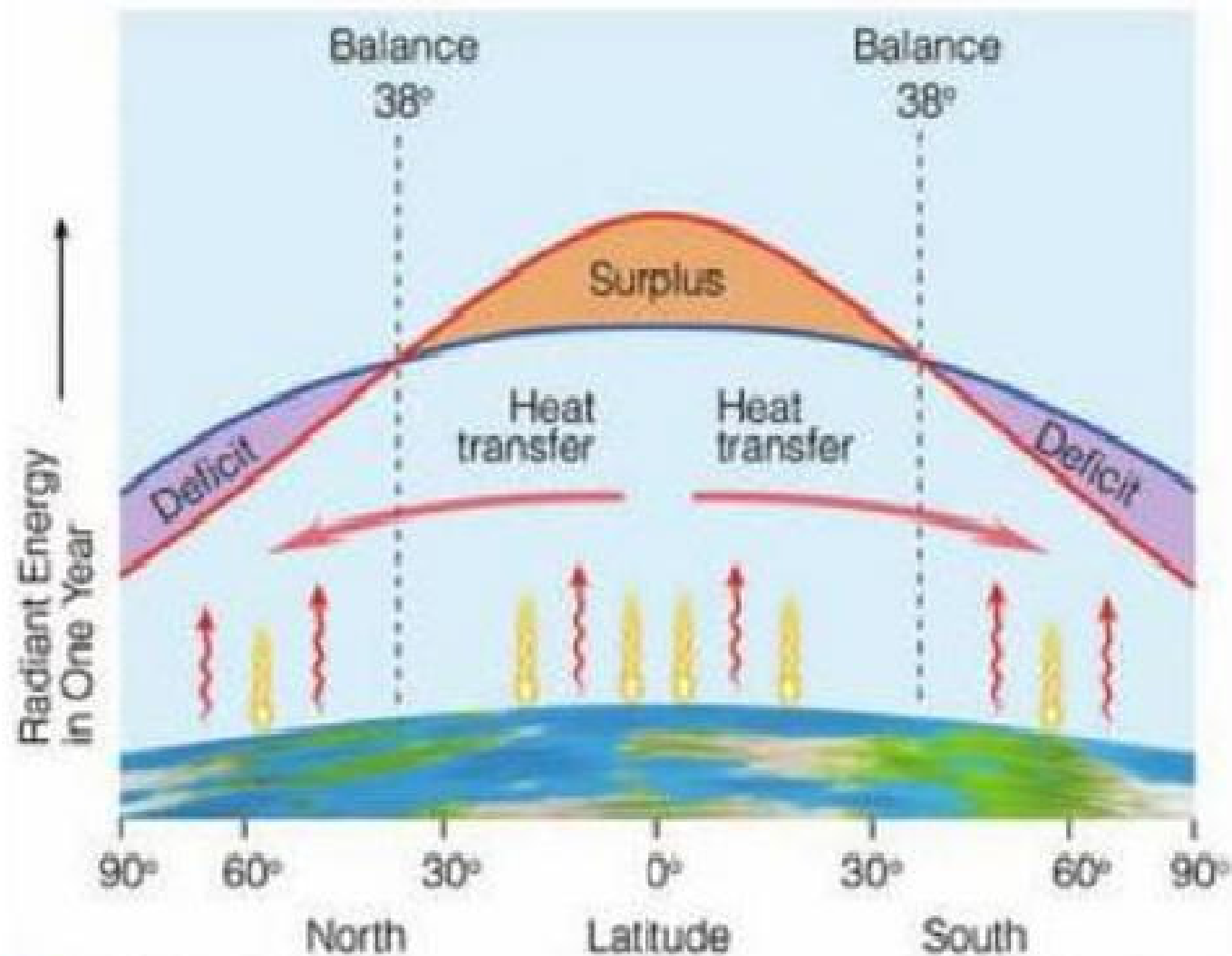
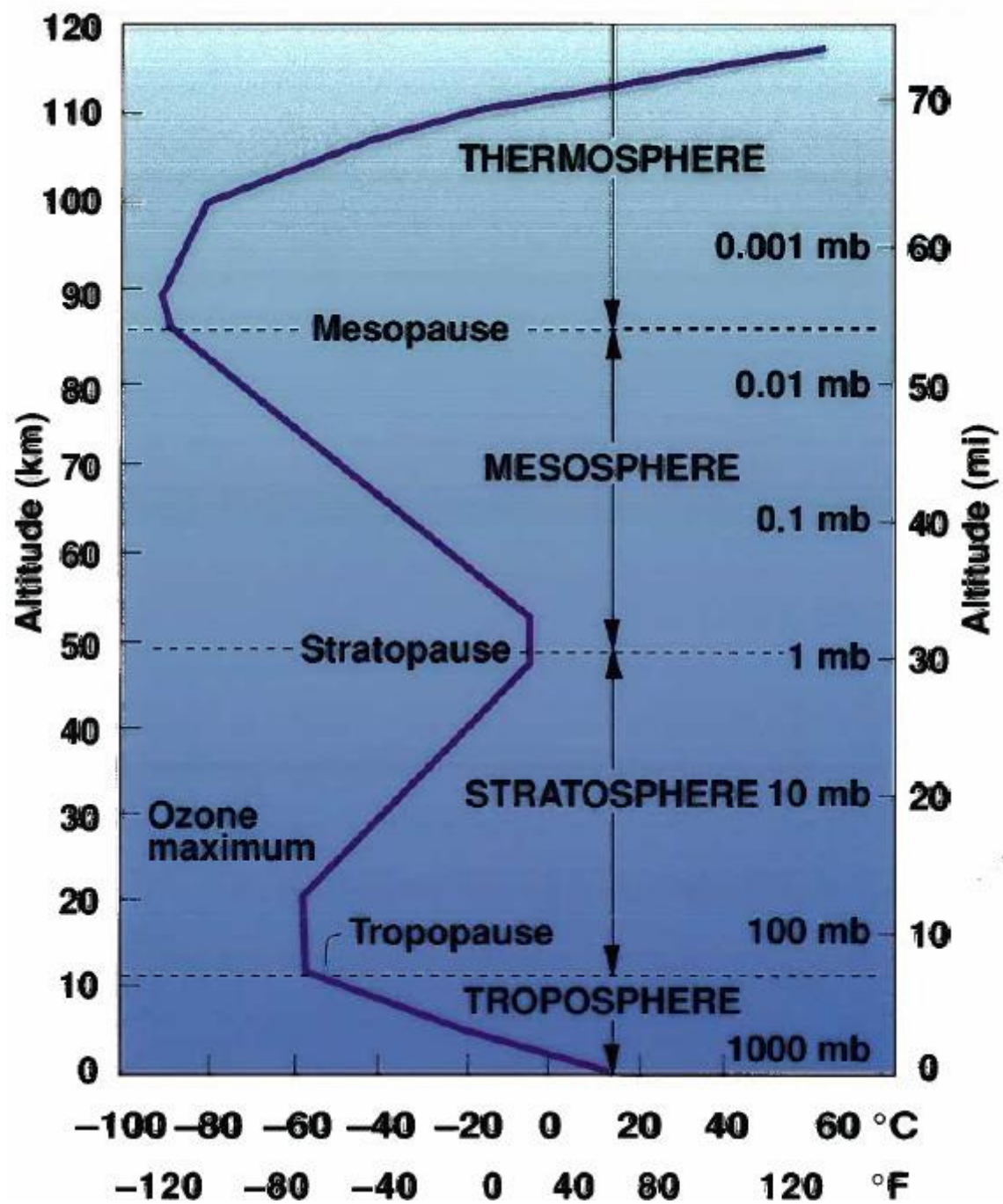
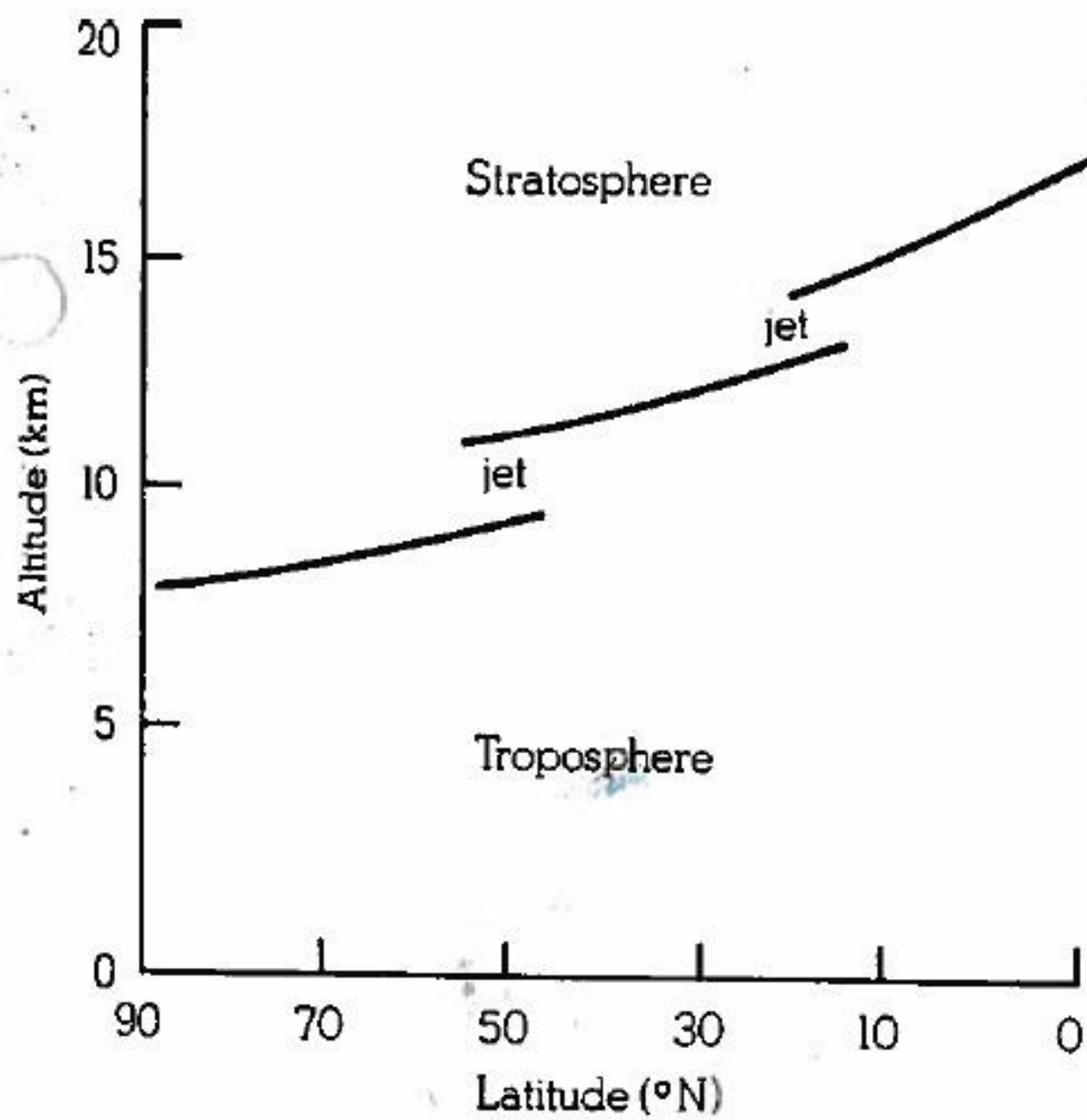
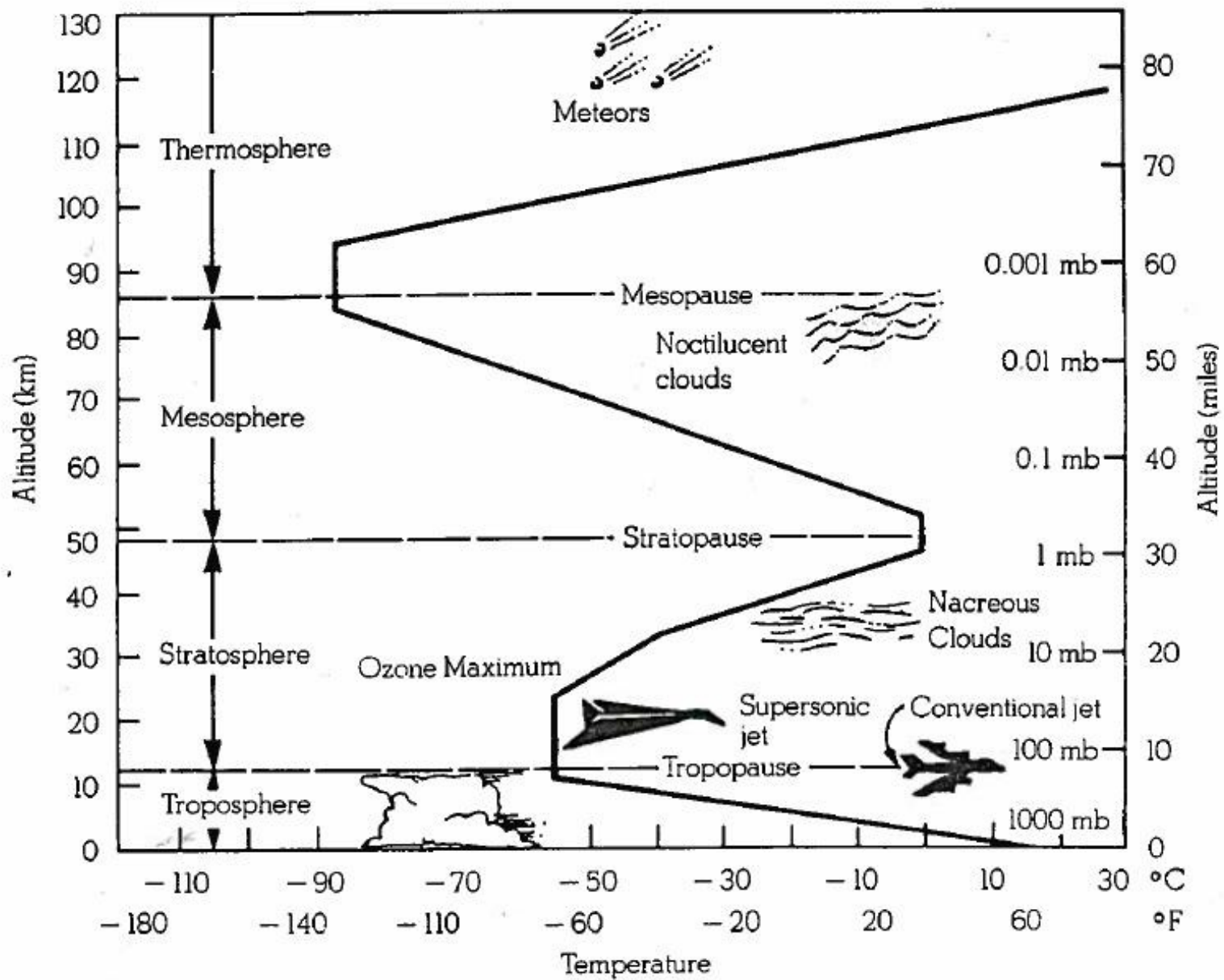


FIGURE 2.17 The average annual incoming solar radiation (red line) absorbed by the earth and the atmosphere along with the average annual infrared radiation (blue line) emitted by the earth and the atmosphere.









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Image courtesy Marc Meyer

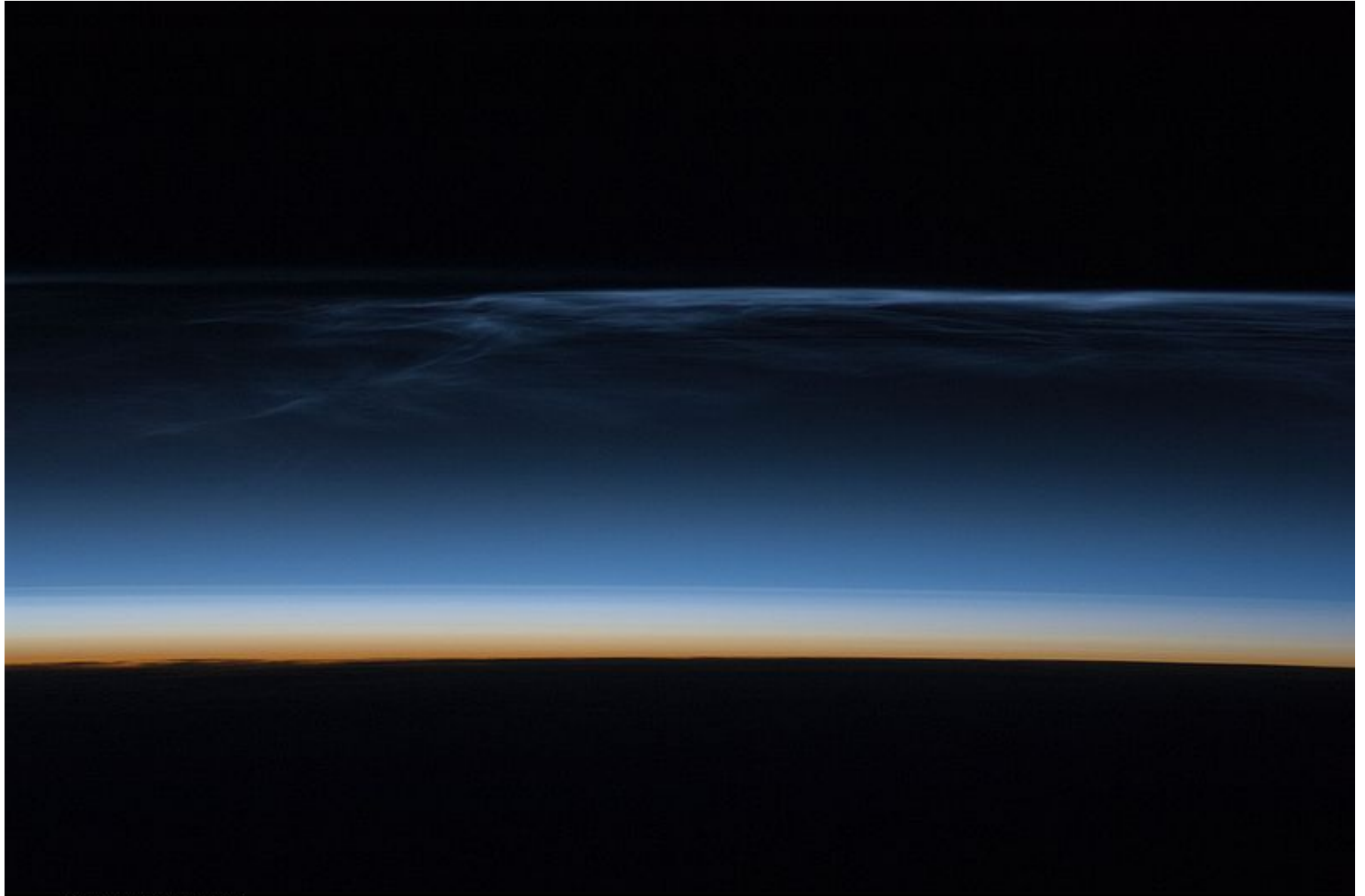


Image courtesy Marc Meyer



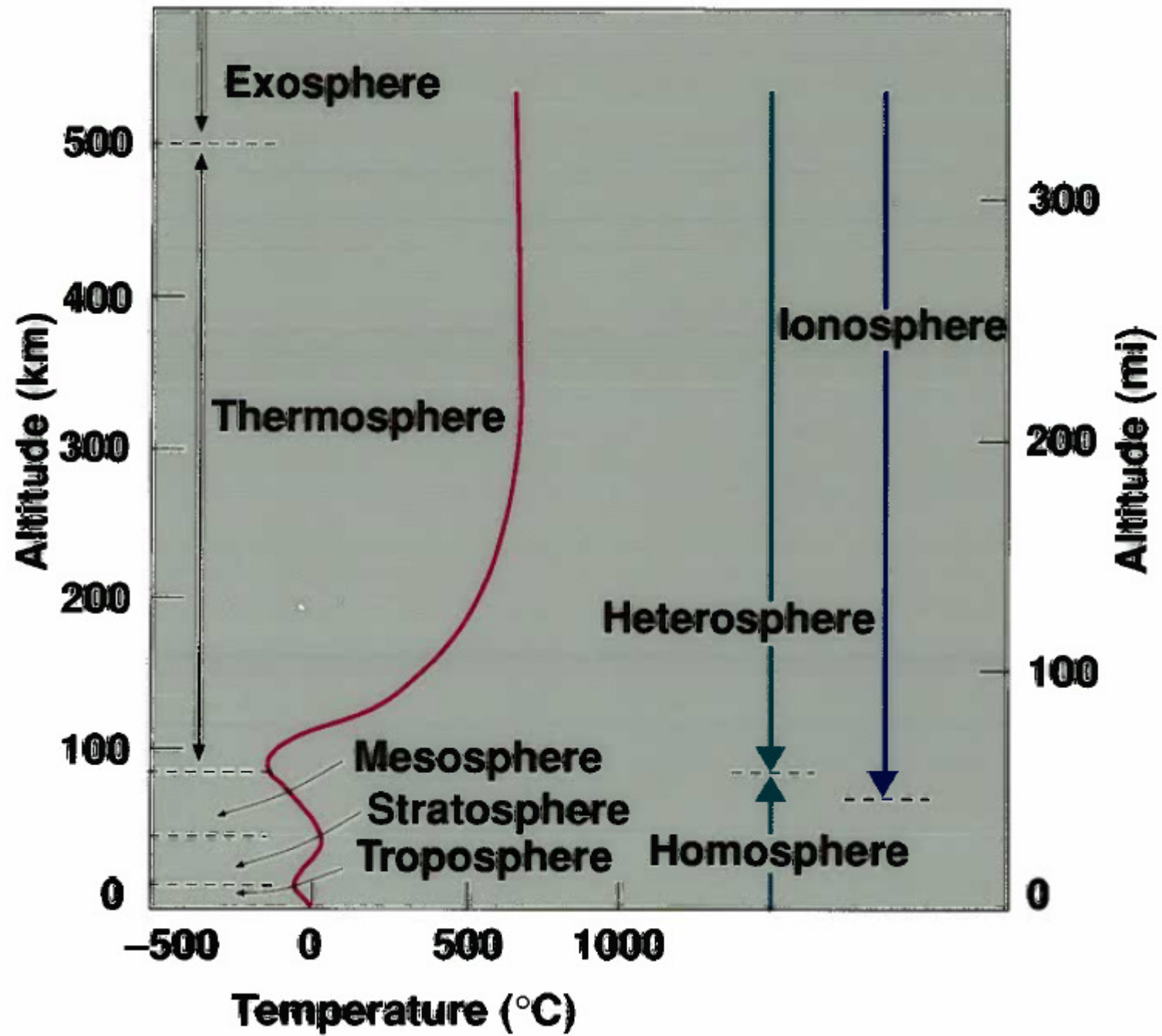






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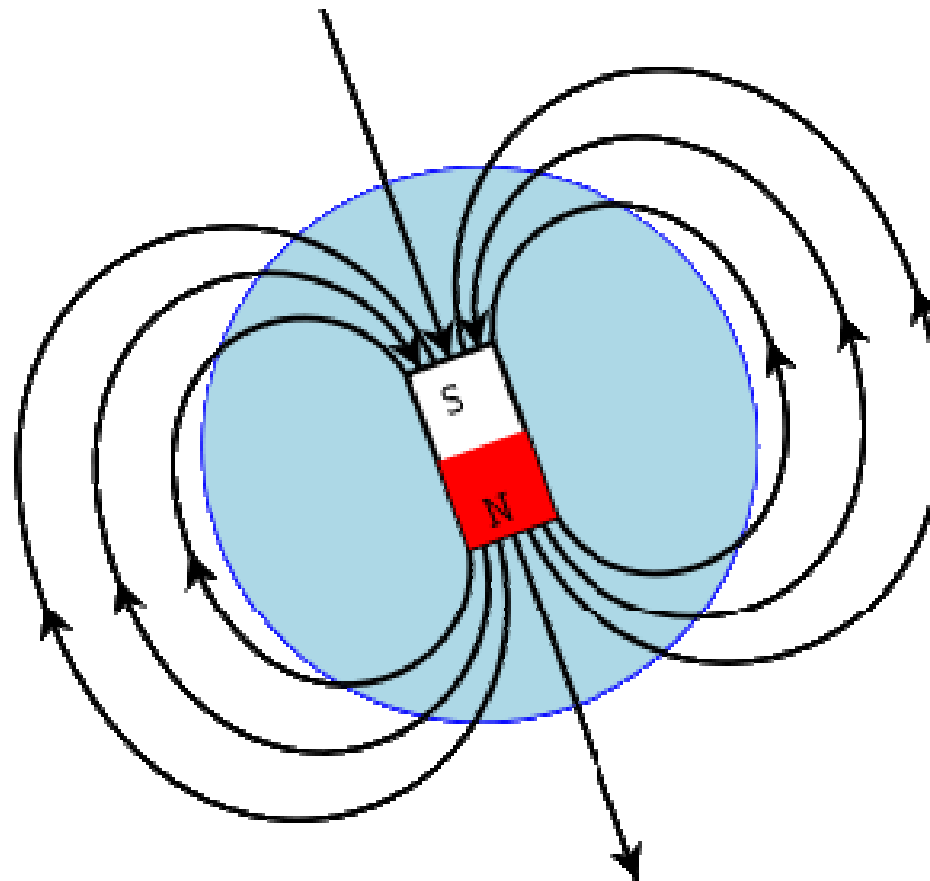


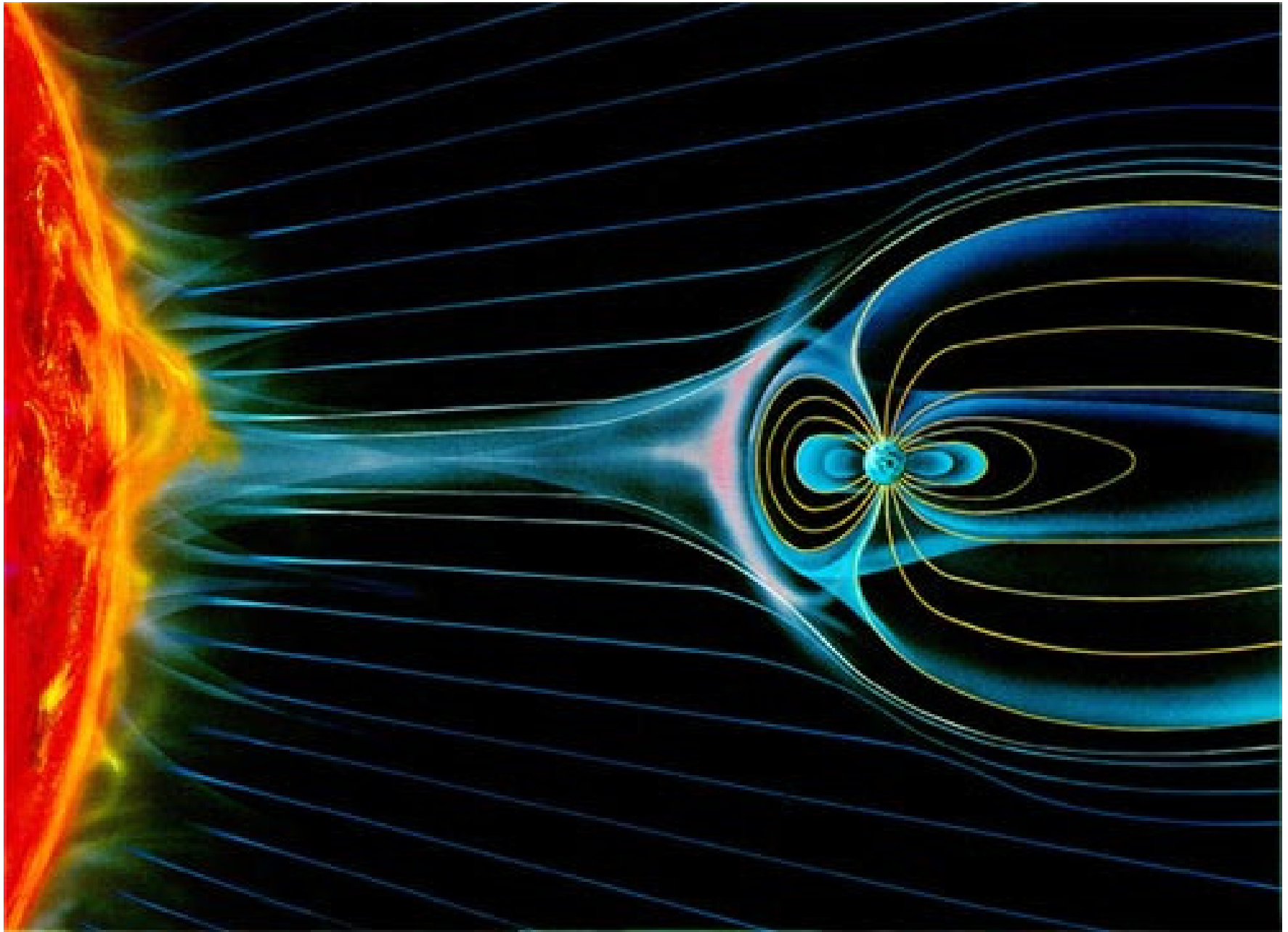


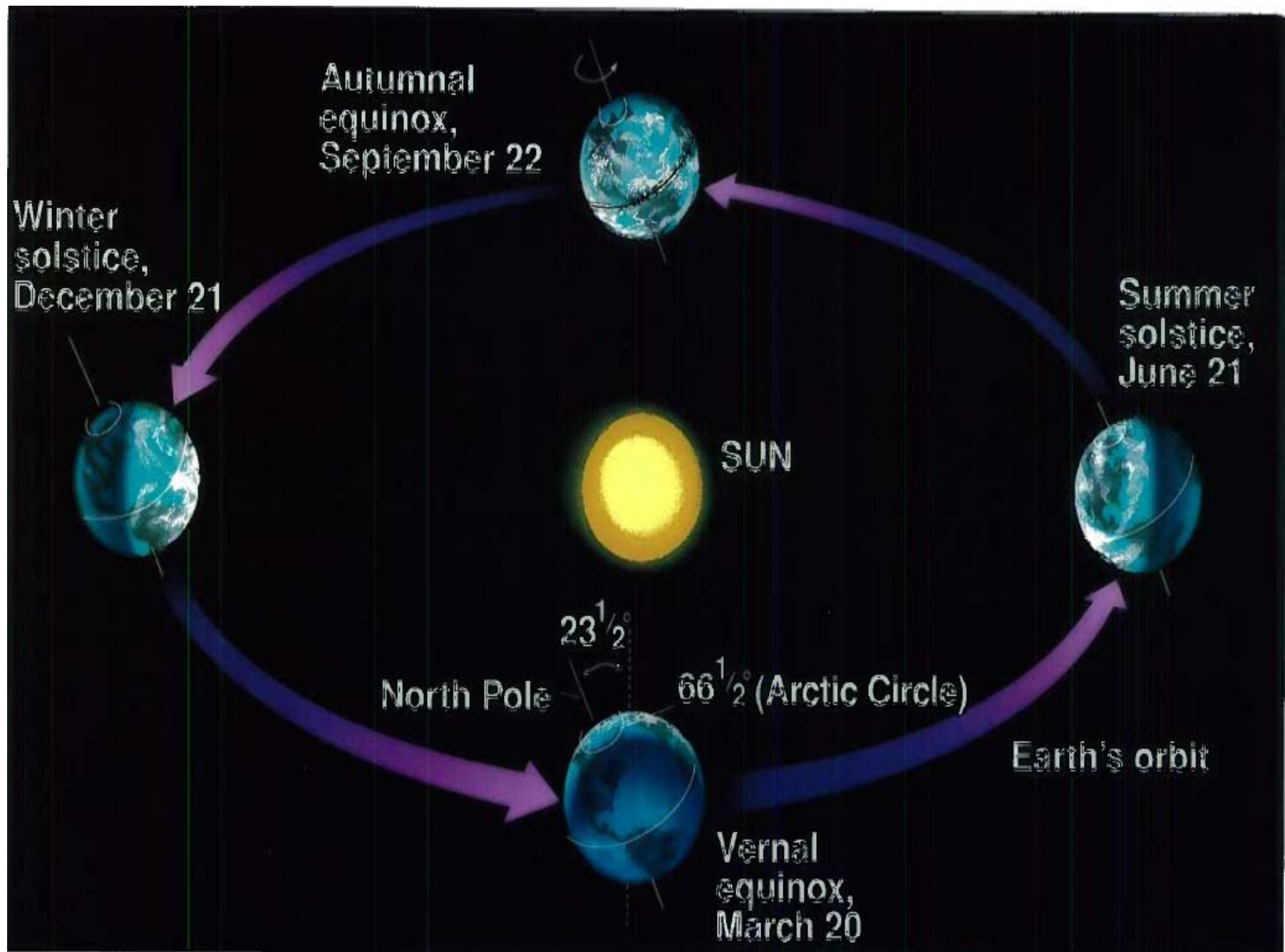


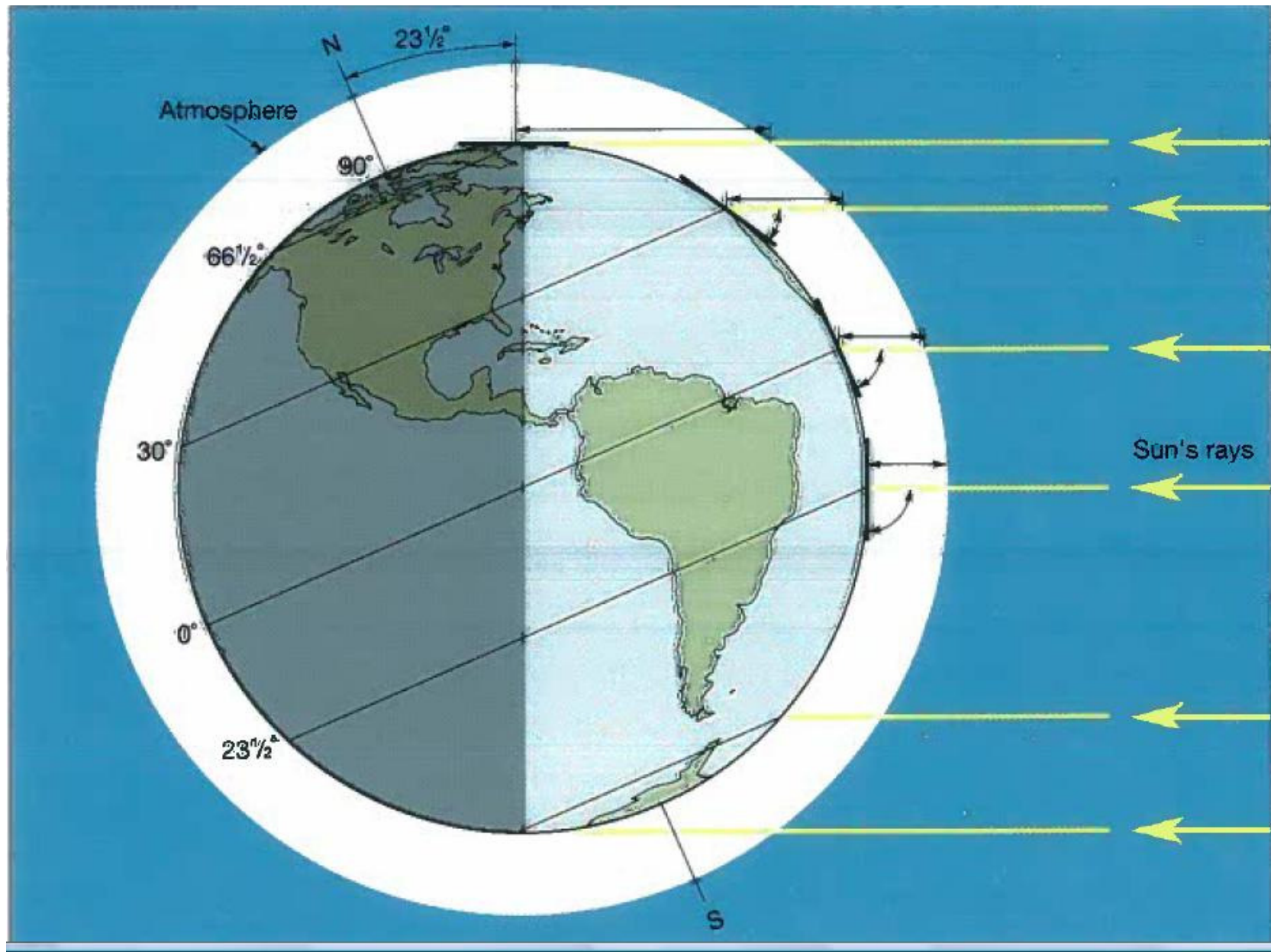












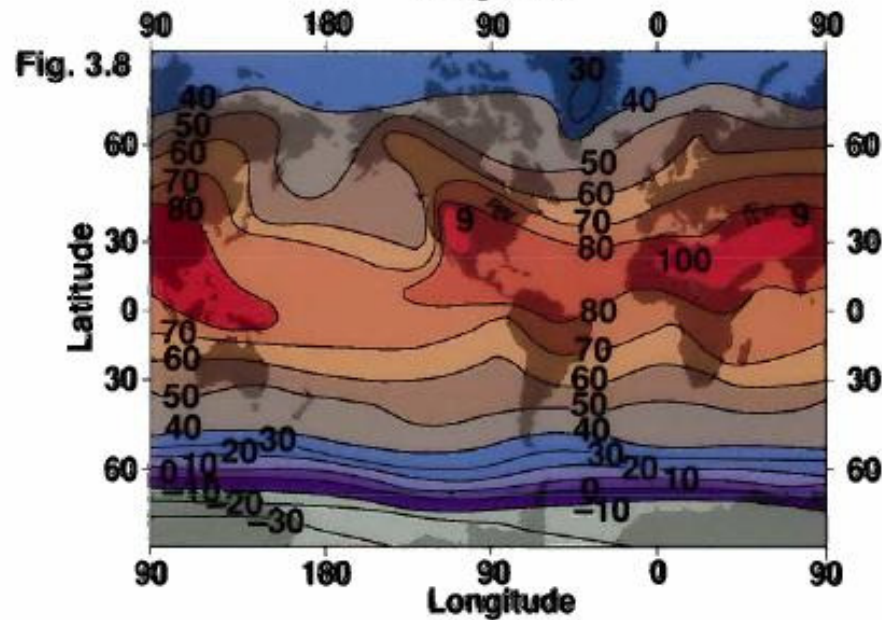
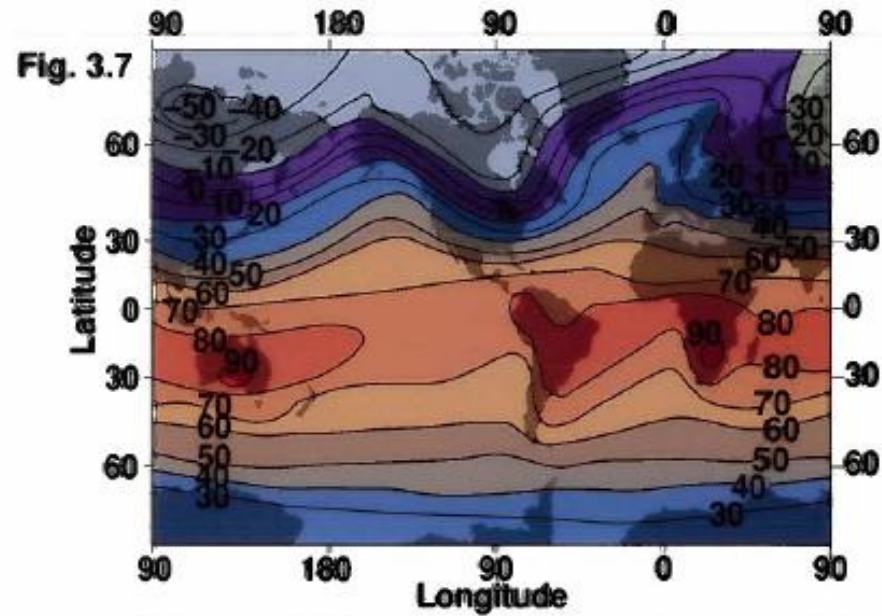


Fig. 3.7 Average air temperature near sea level for January and (Fig. 3.8) July.

FIGURE 3-10 World map: January temperatures.

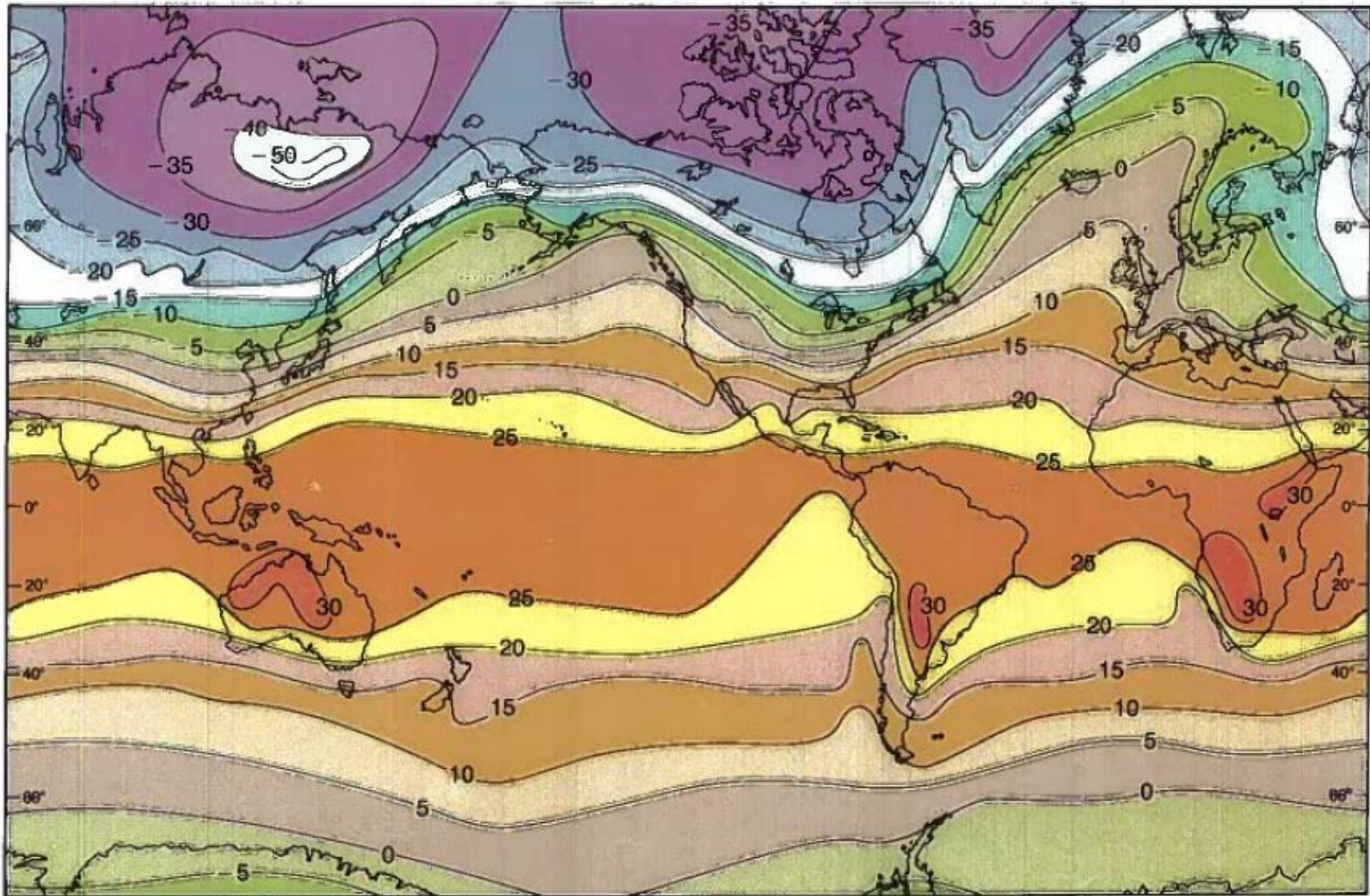


FIGURE 3-11 World map: July temperatures.

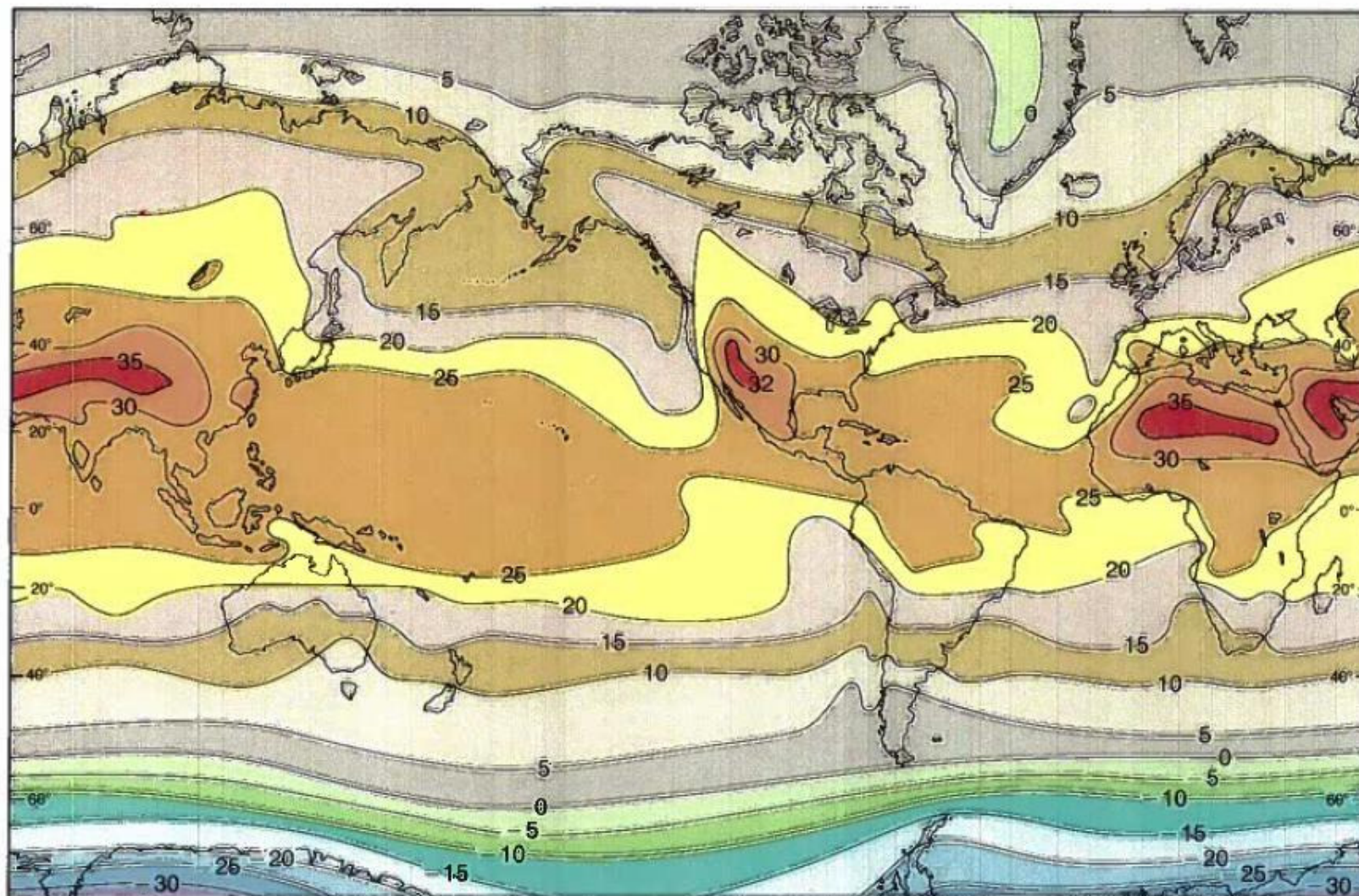


Figure 1.8

Relationship between air pressure and altitude

