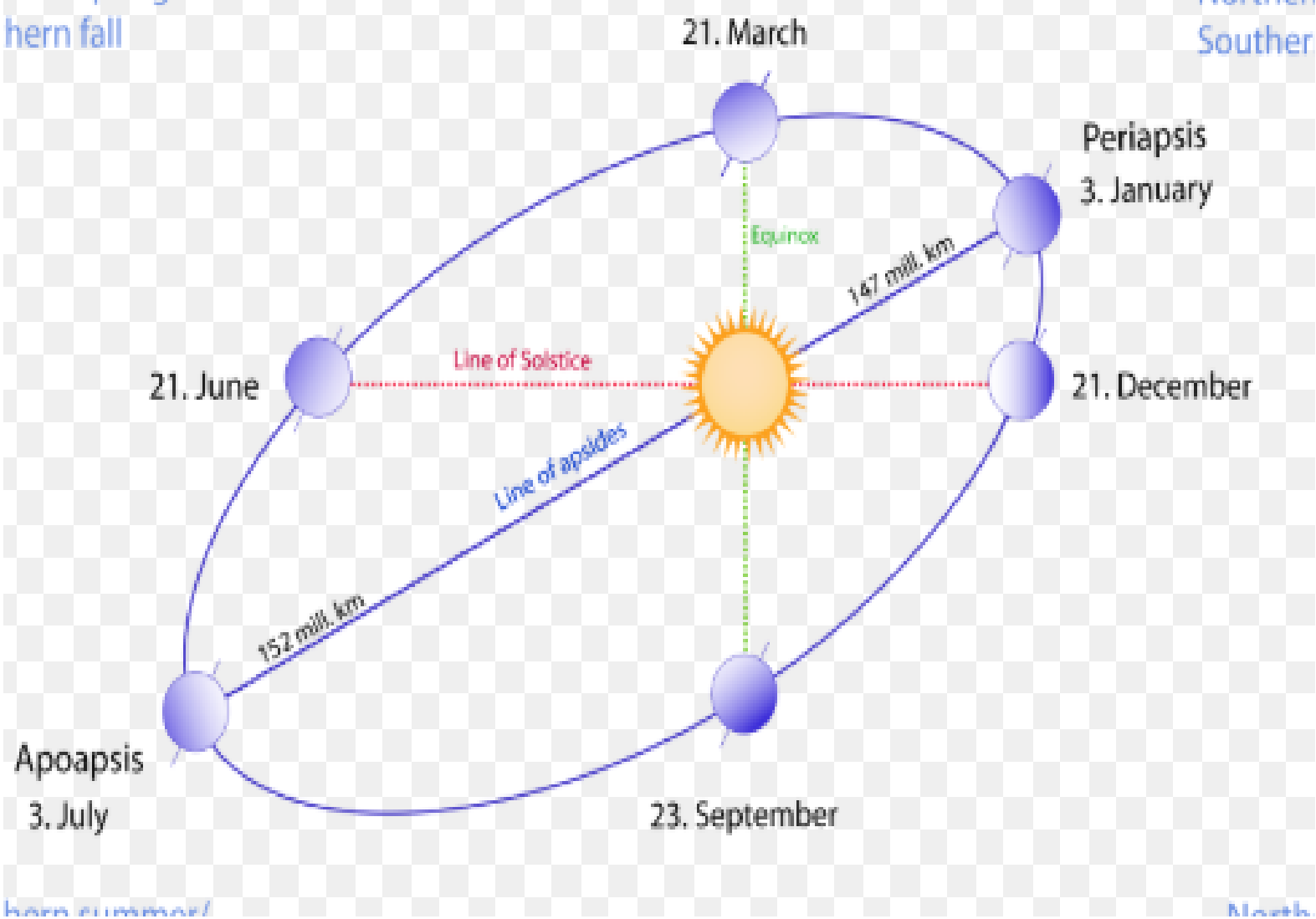


her spring/
her fall

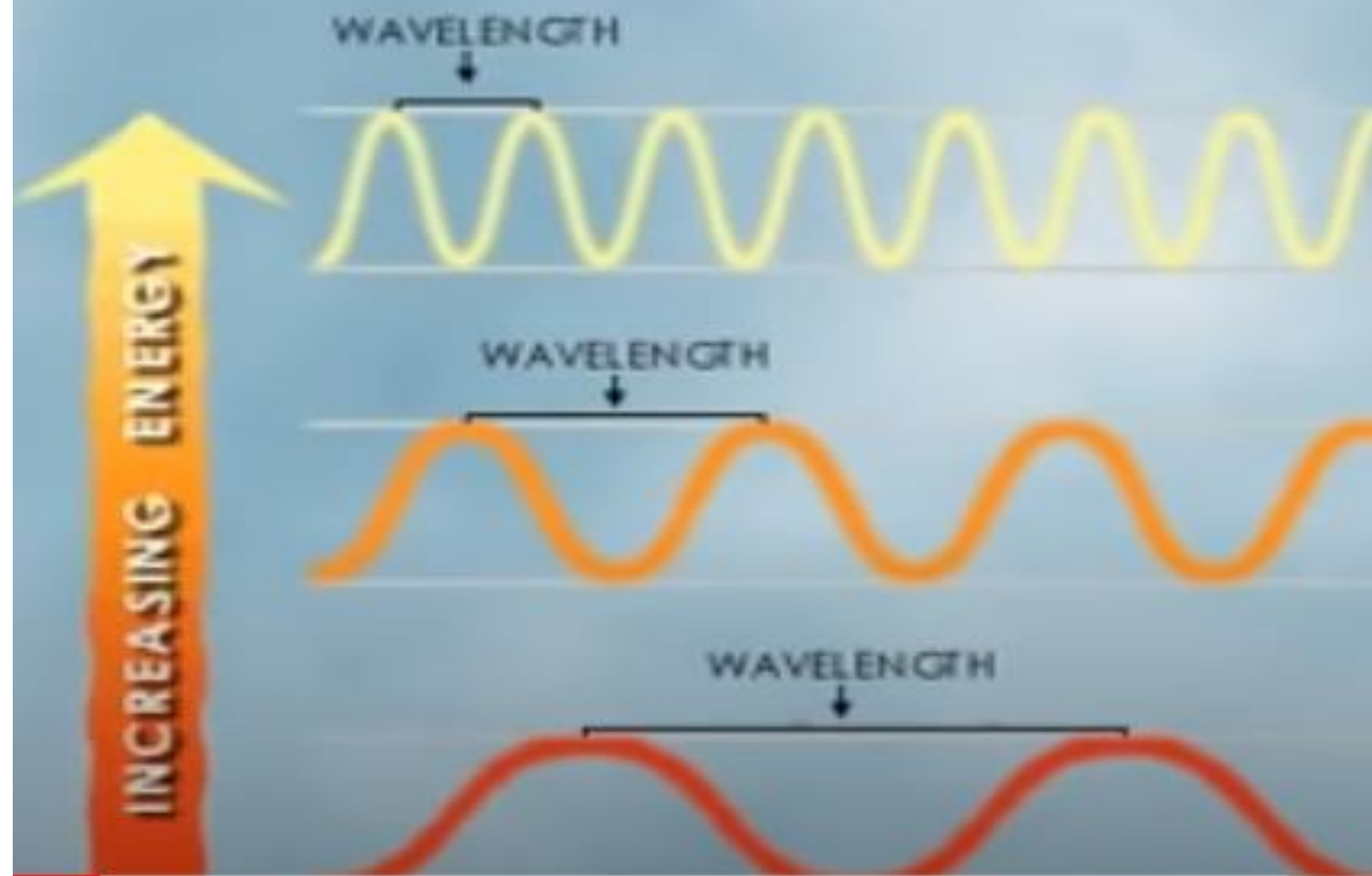
Northern
Southern



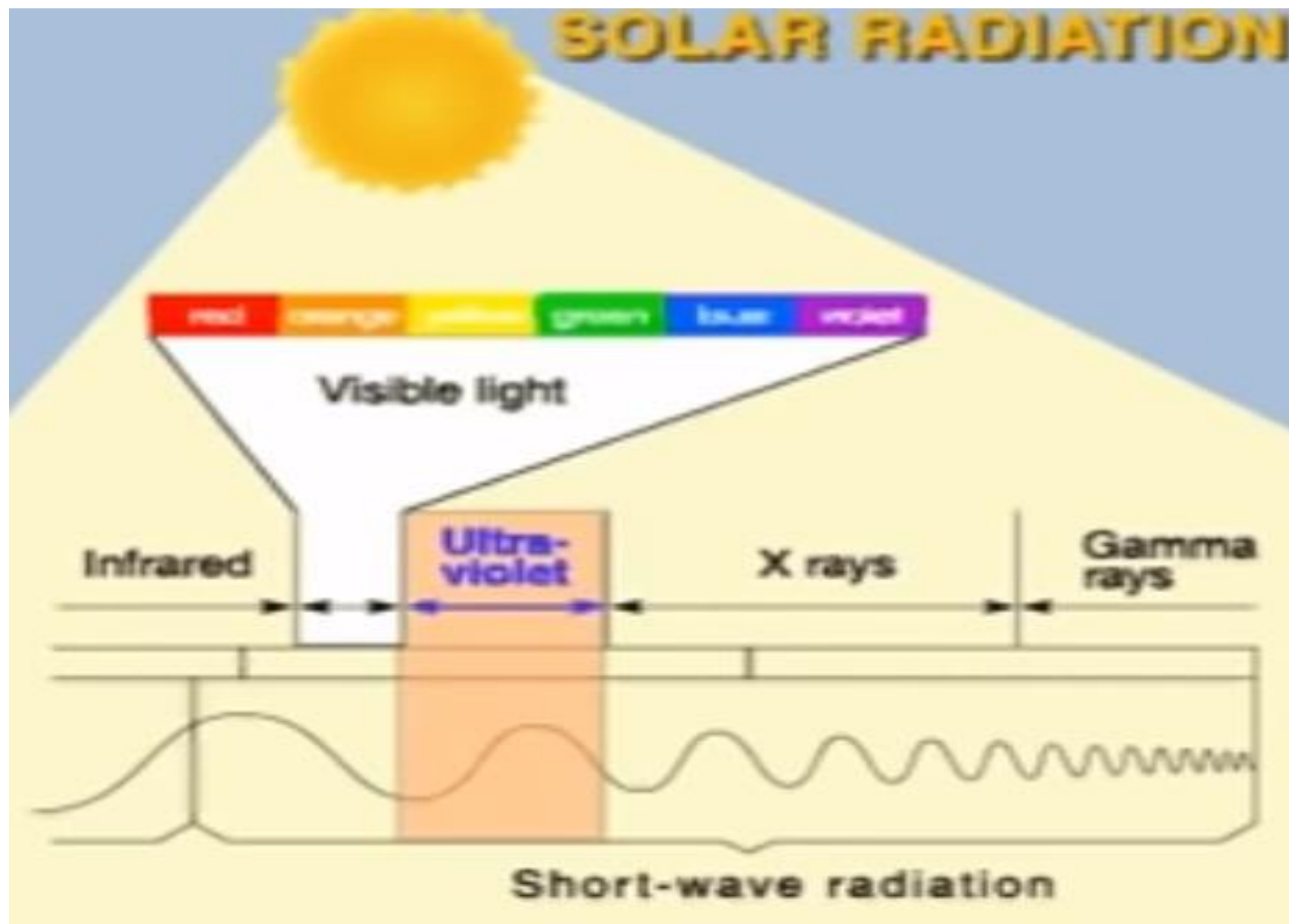
her summer/
her winter

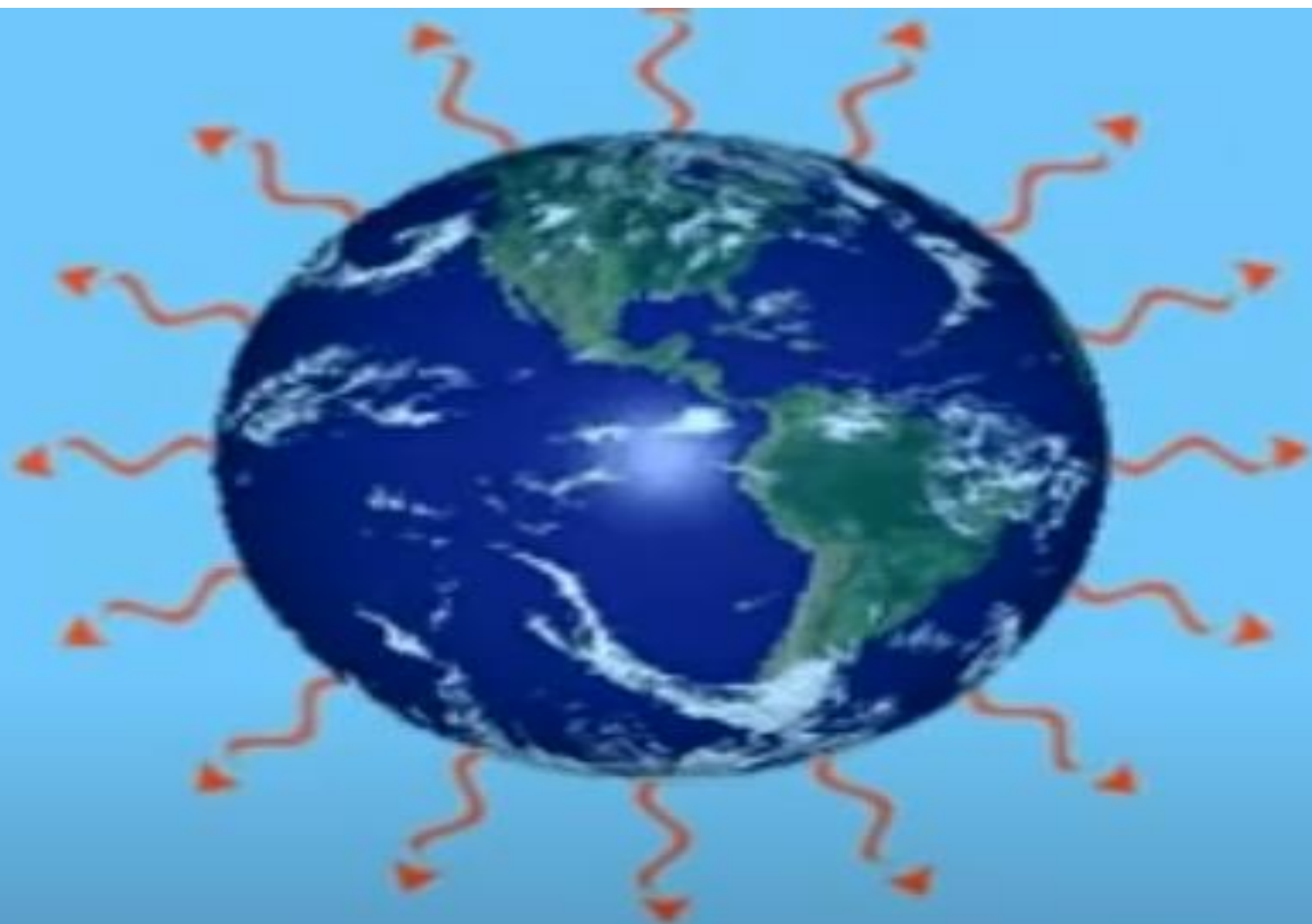
Northern
Southern

Electromagnetic Radiation



SOLAR RADIATION





**Terrestrial or Longwave
Radiation**

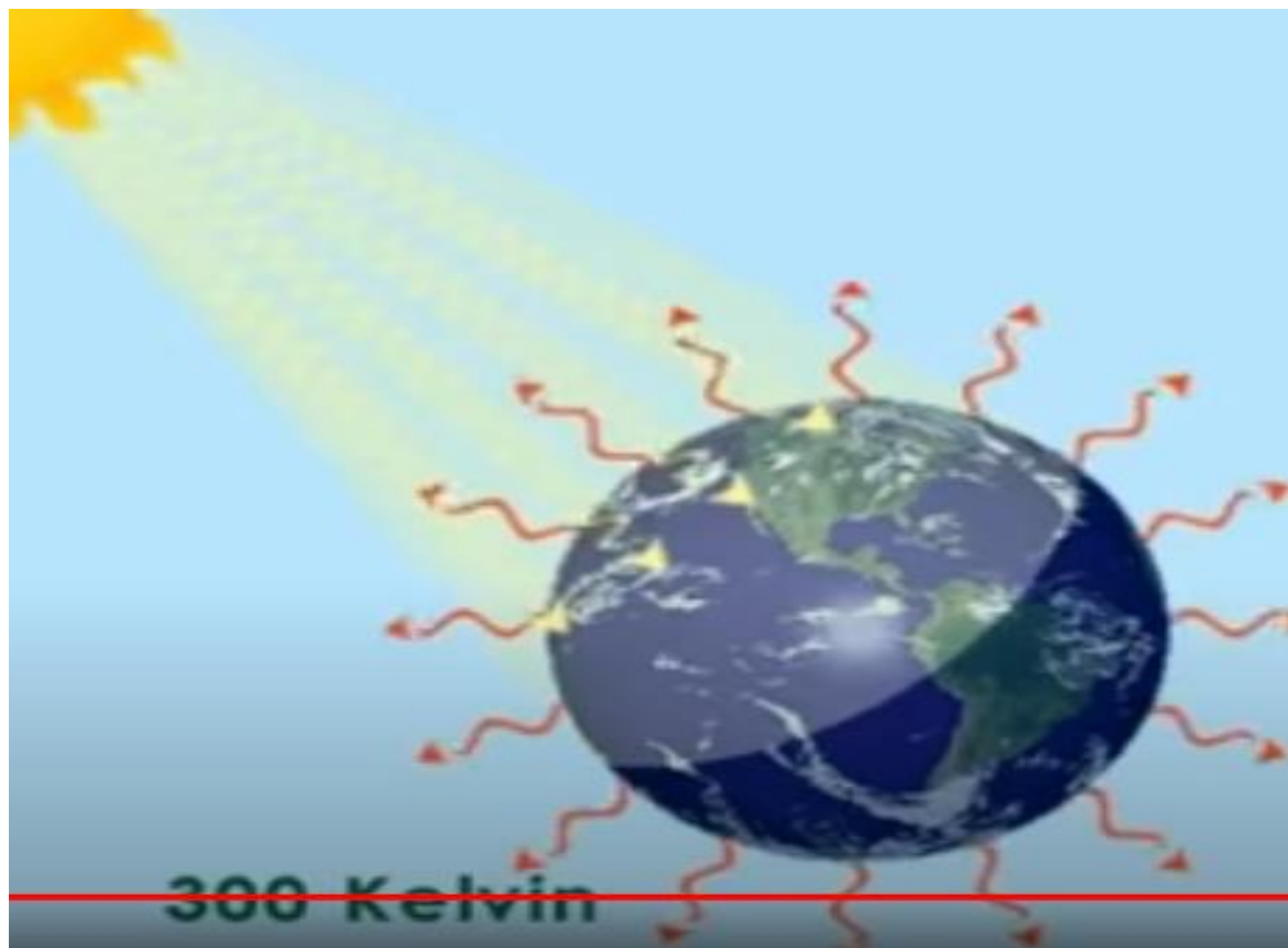
6000 Kelvin (K)

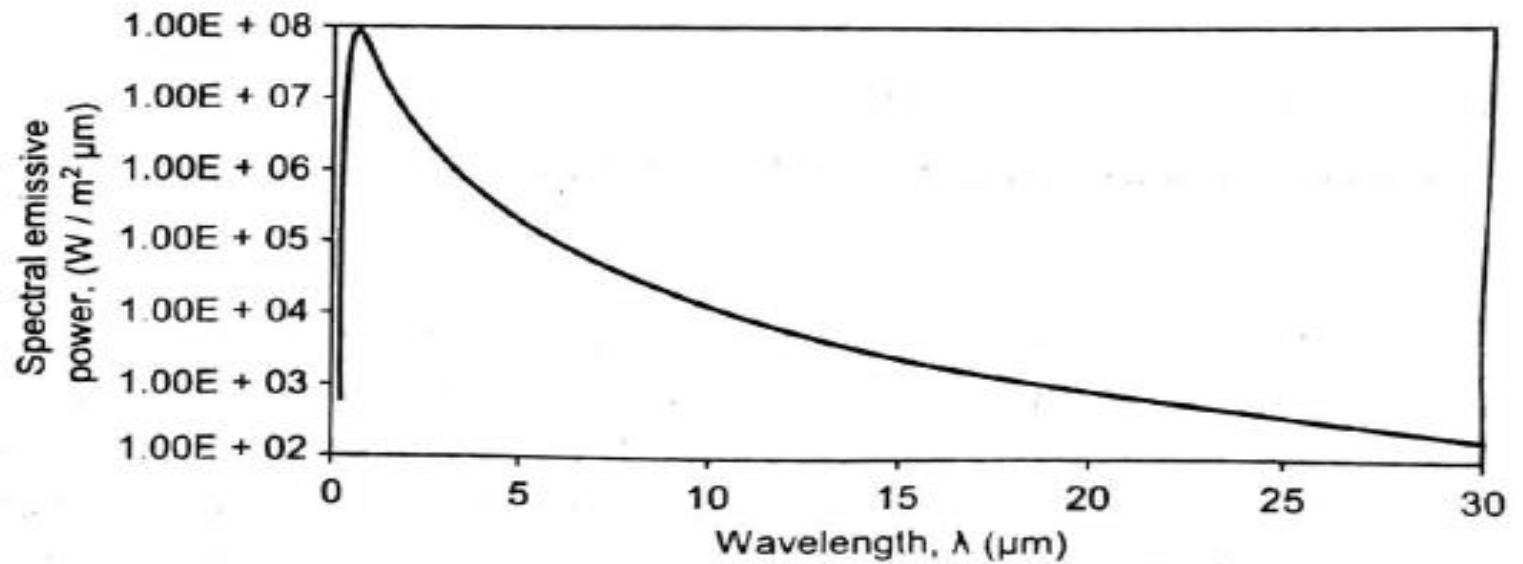
=

5726.85 Celsius (°C)

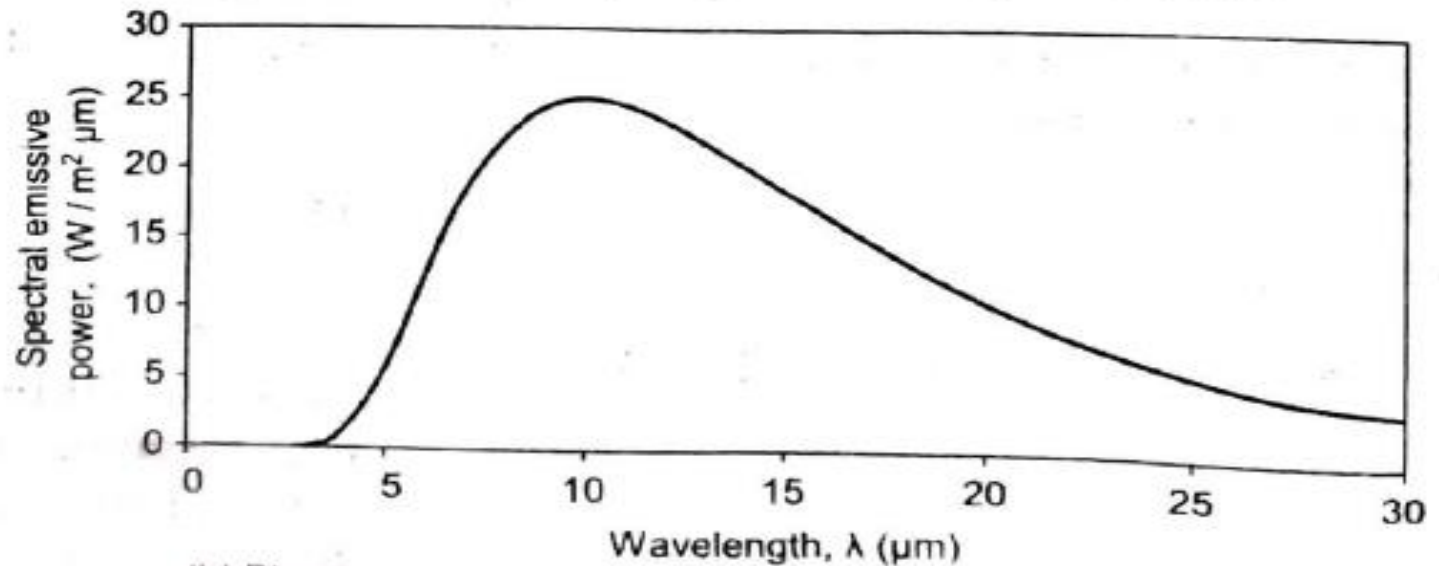
6000 Kelvin







(a) Blackbody emissive power at $T = 5760^\circ\text{K}$ (surface of sun)



(b) Blackbody emissive power at $T = 288^\circ\text{K}$ (surface of earth)

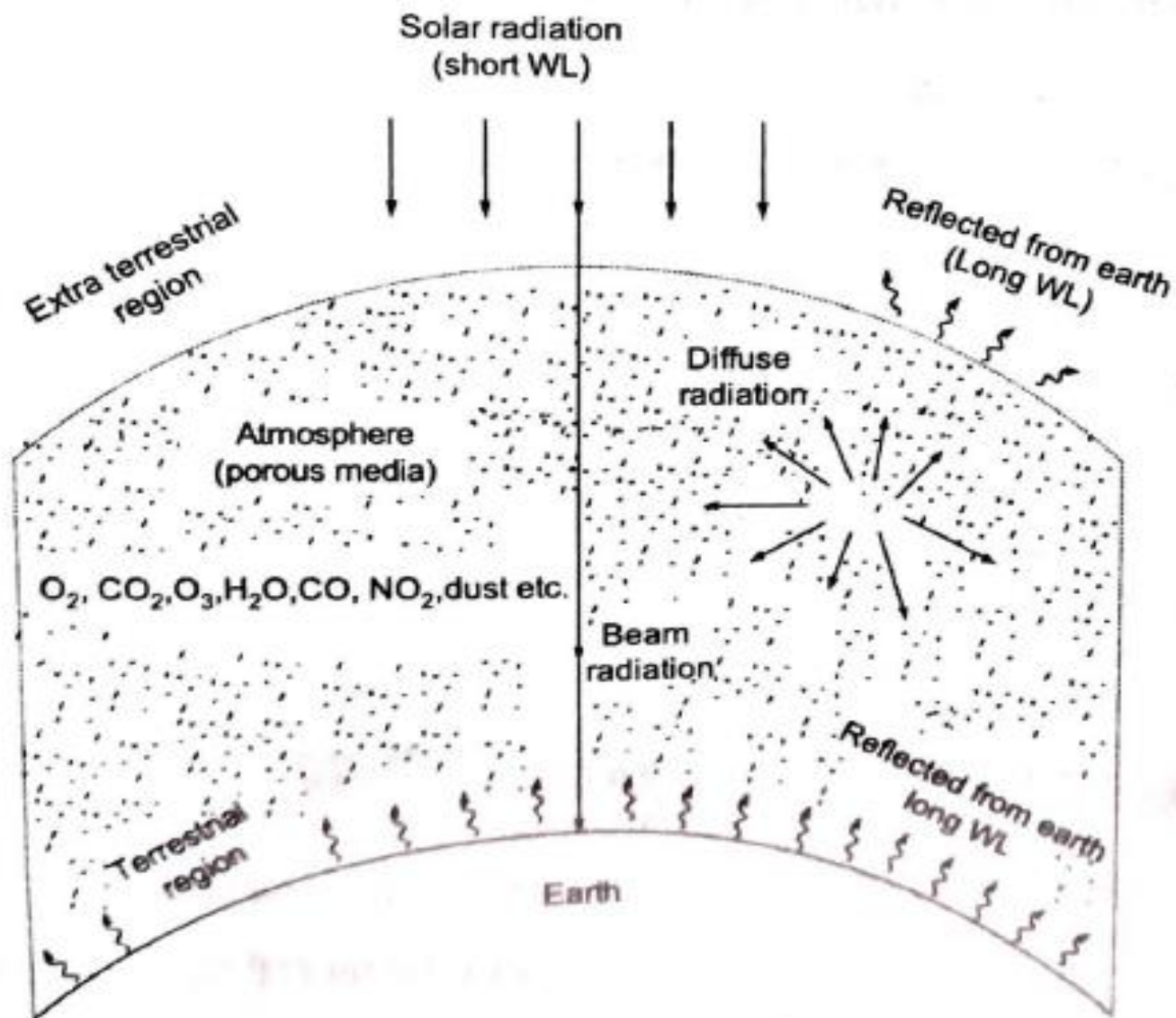


Fig. 4.3 Propagation of solar radiation through the atmosphere

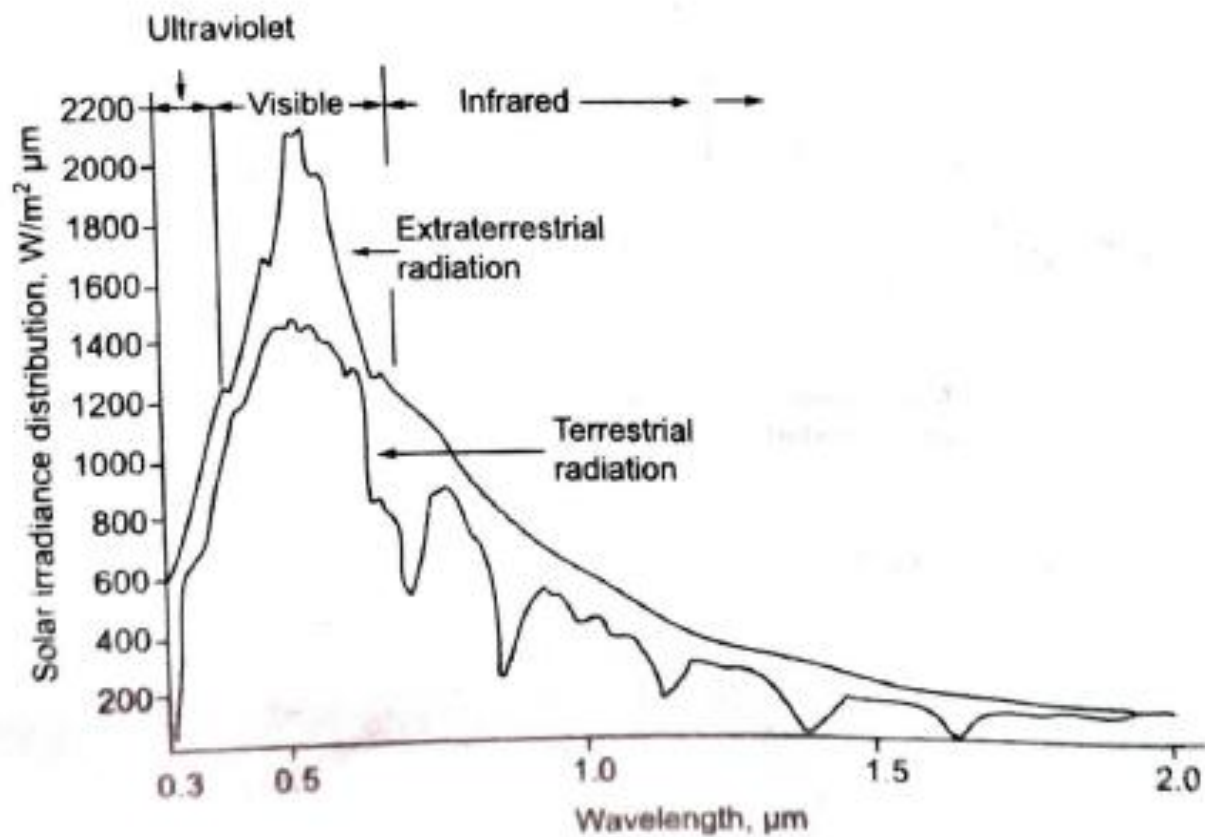
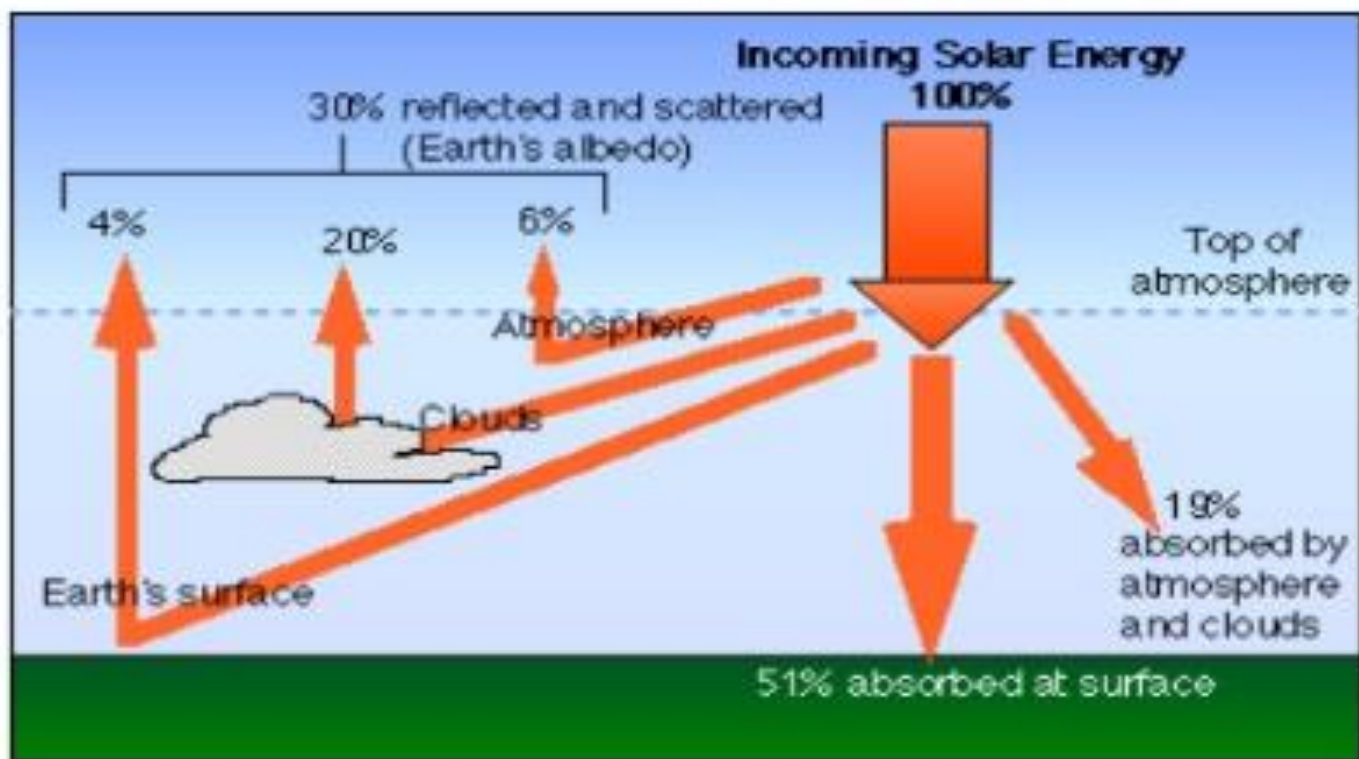


Fig. 4-4 Spectral solar irradiation, extraterrestrial and terrestrial

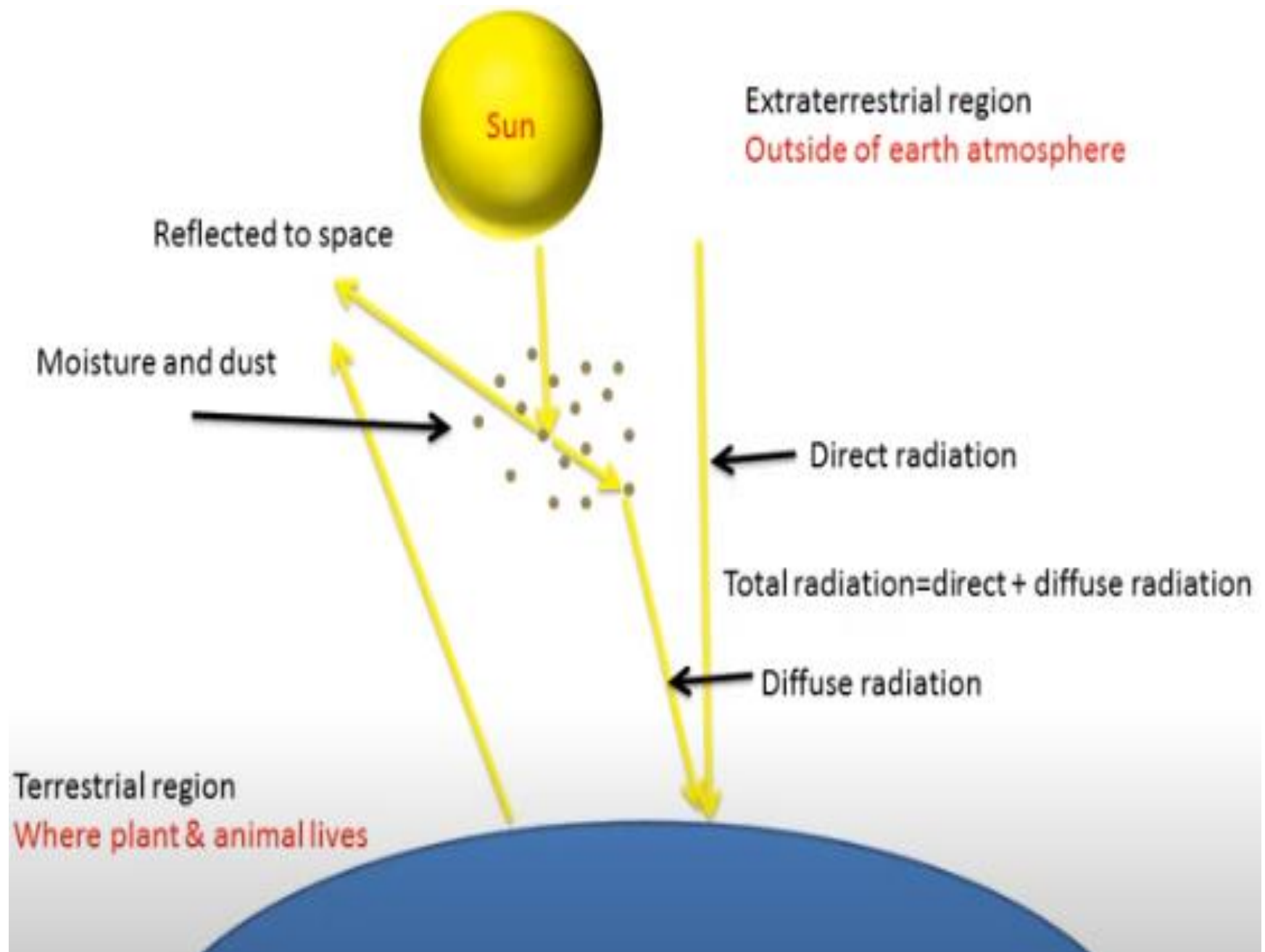
DEPLETION OF SOLAR RADIATION

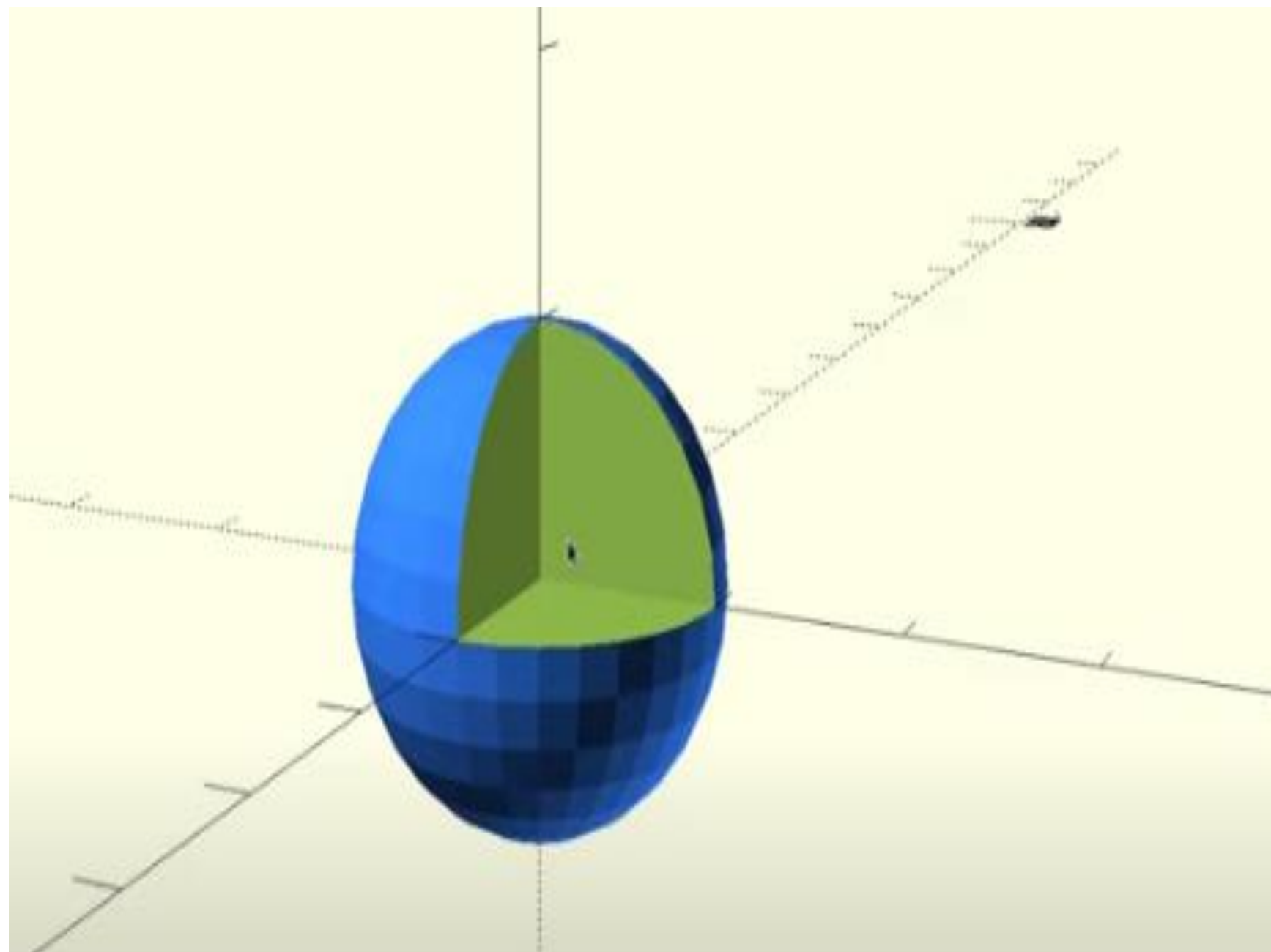
Solar radiation at the earth's surface (Terrestrial radiation)

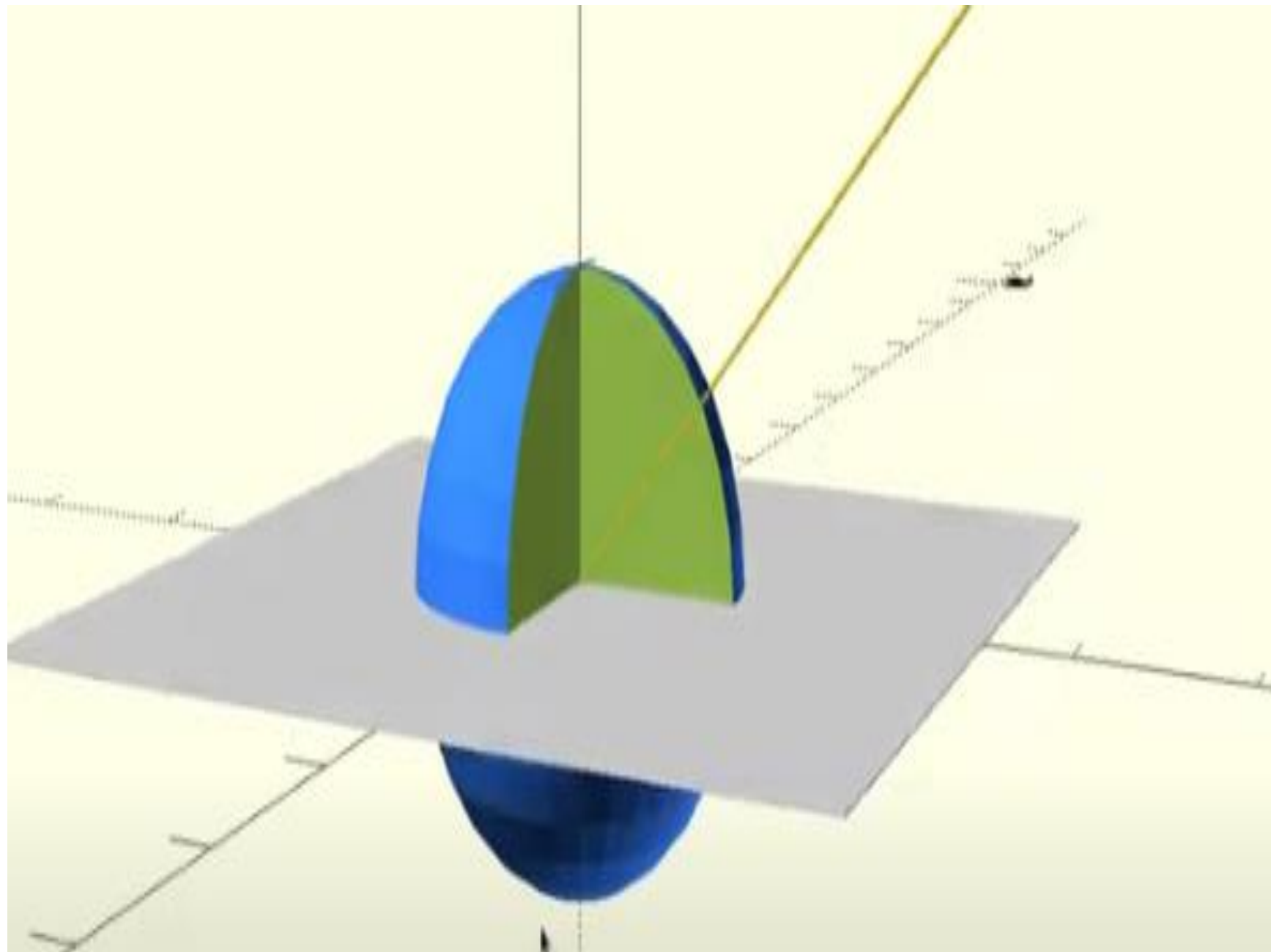
- The solar radiation that reaches the earth surface after passing through the earth's atmosphere is known as terrestrial radiation.

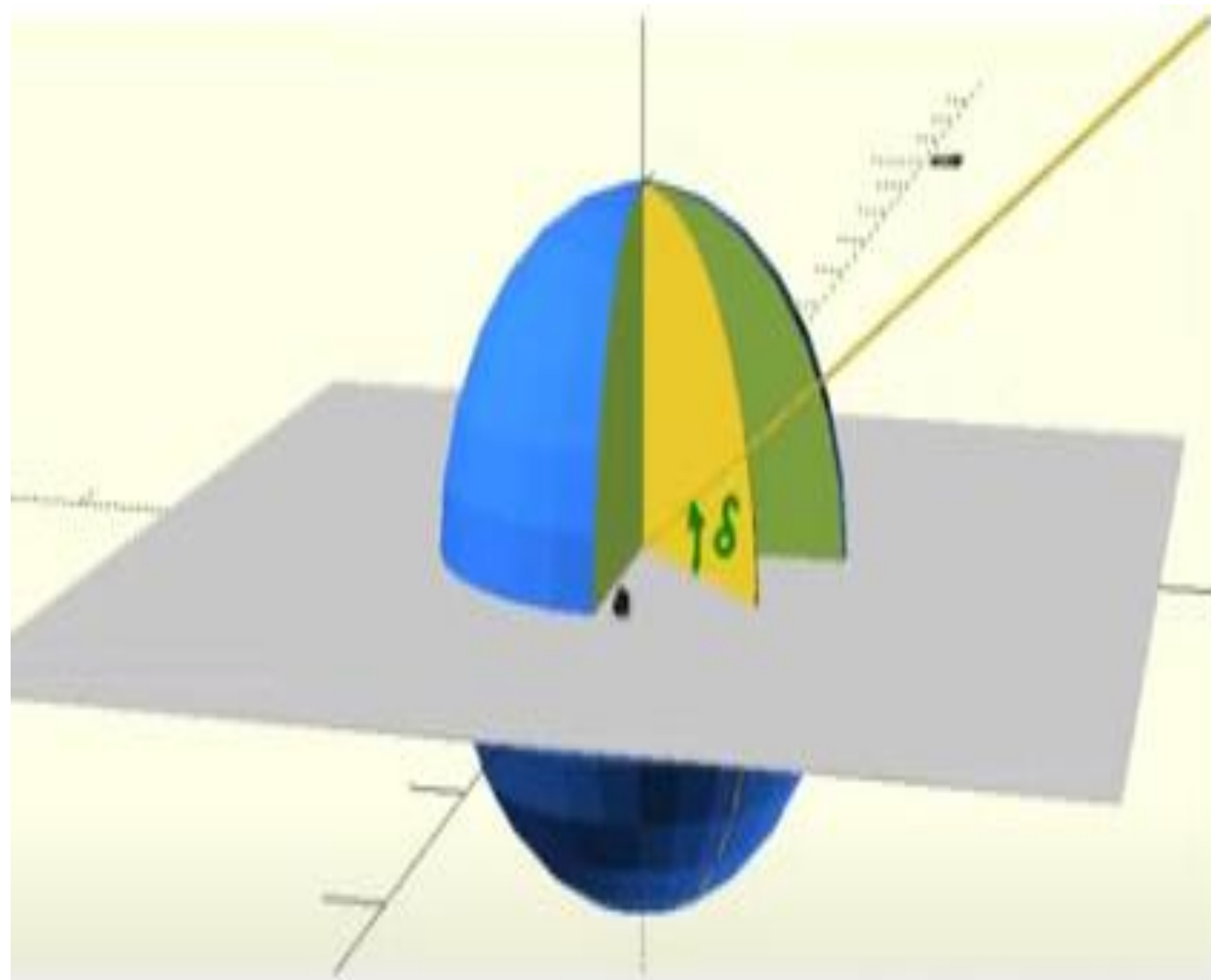


$$I = I_o [1 + 0.034 \cos (360 n/365.25)]$$

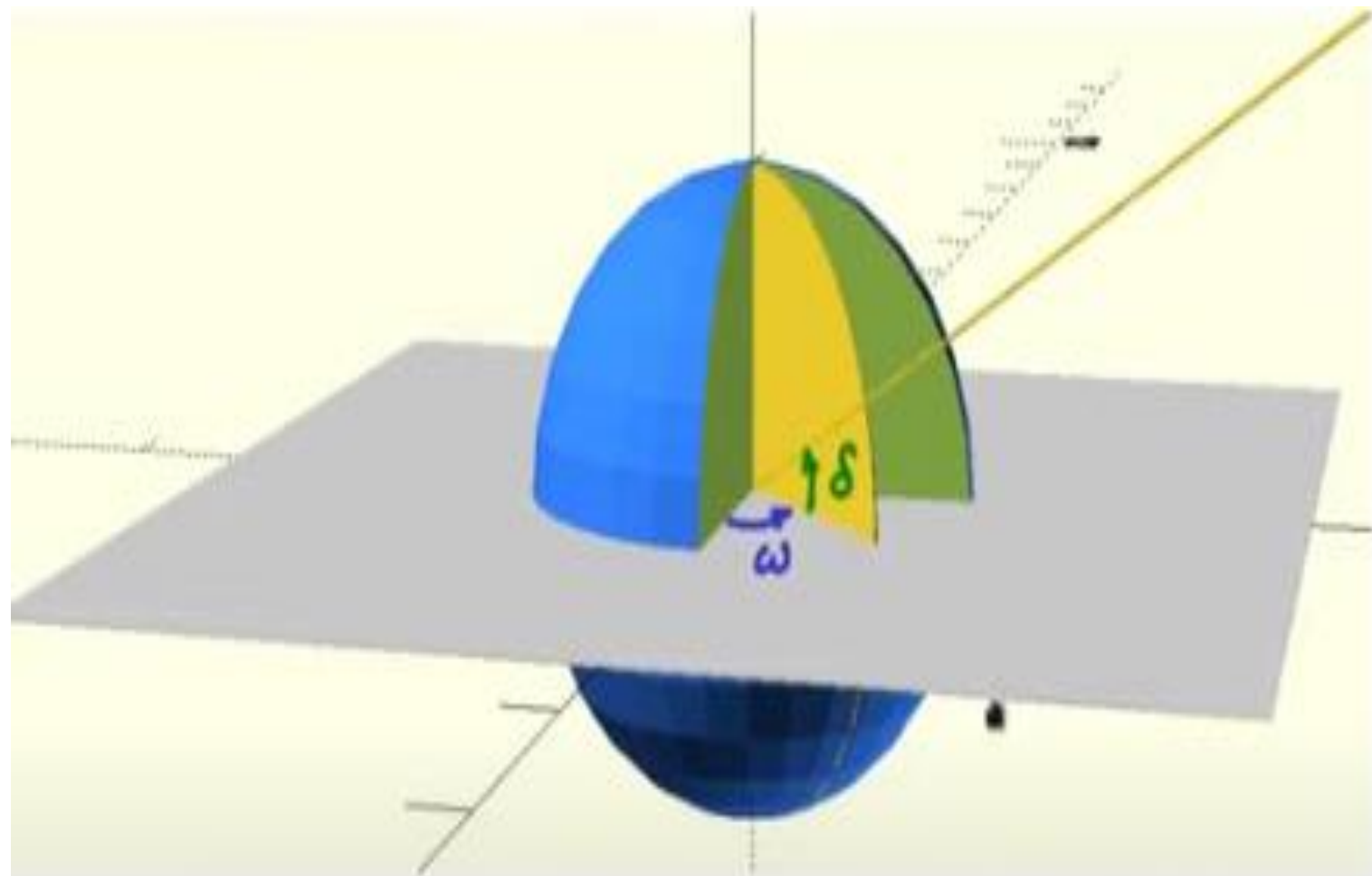




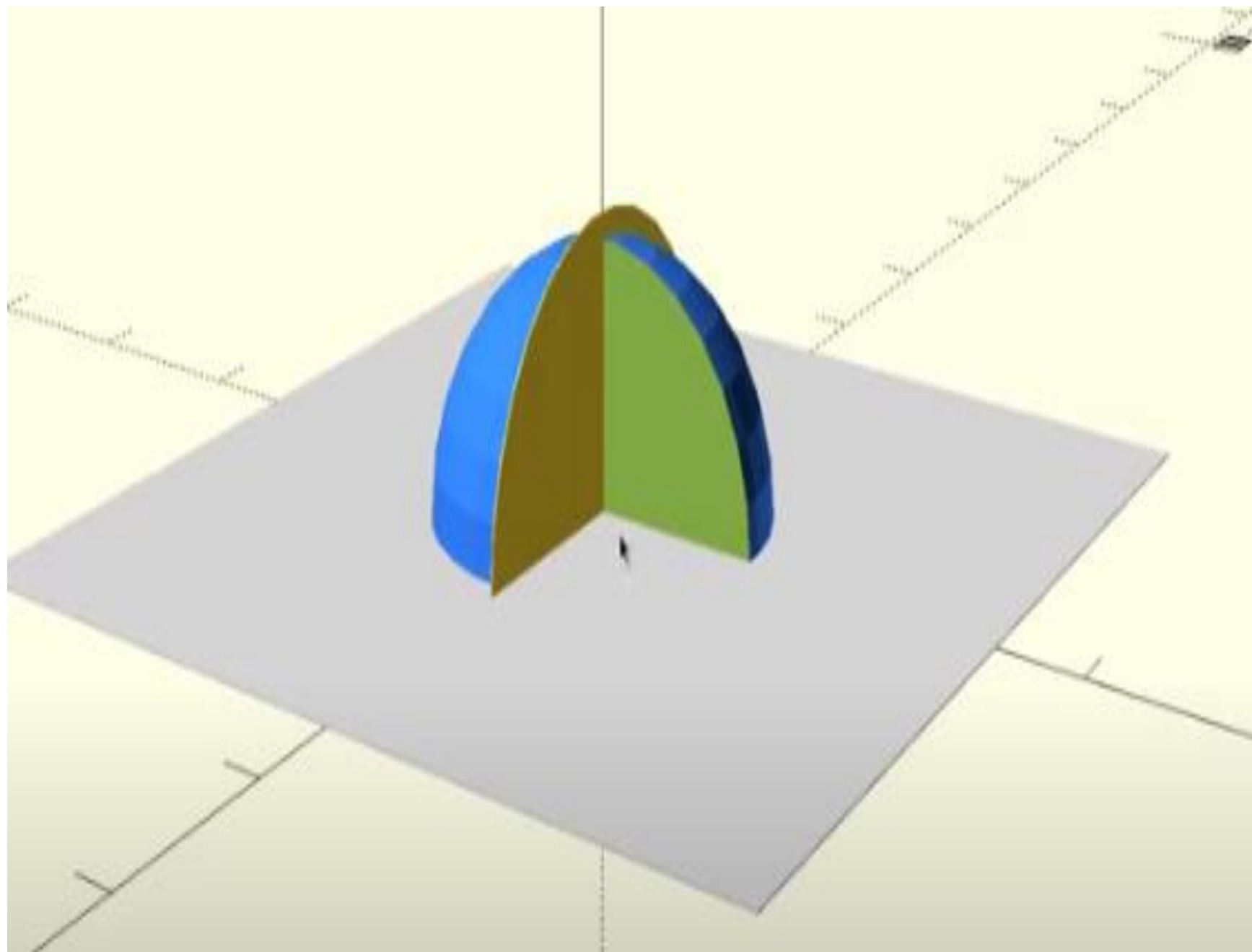




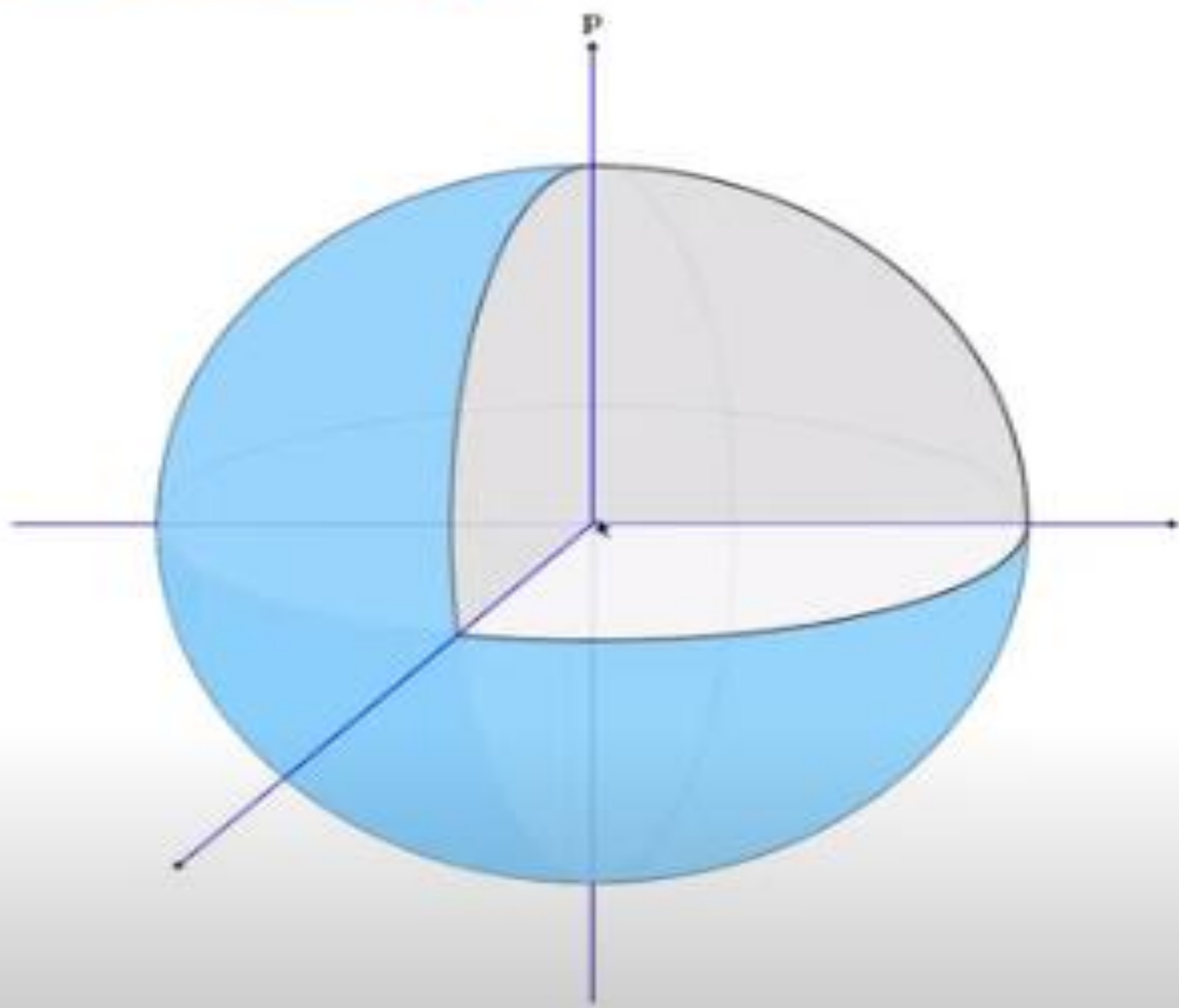
δ - declination



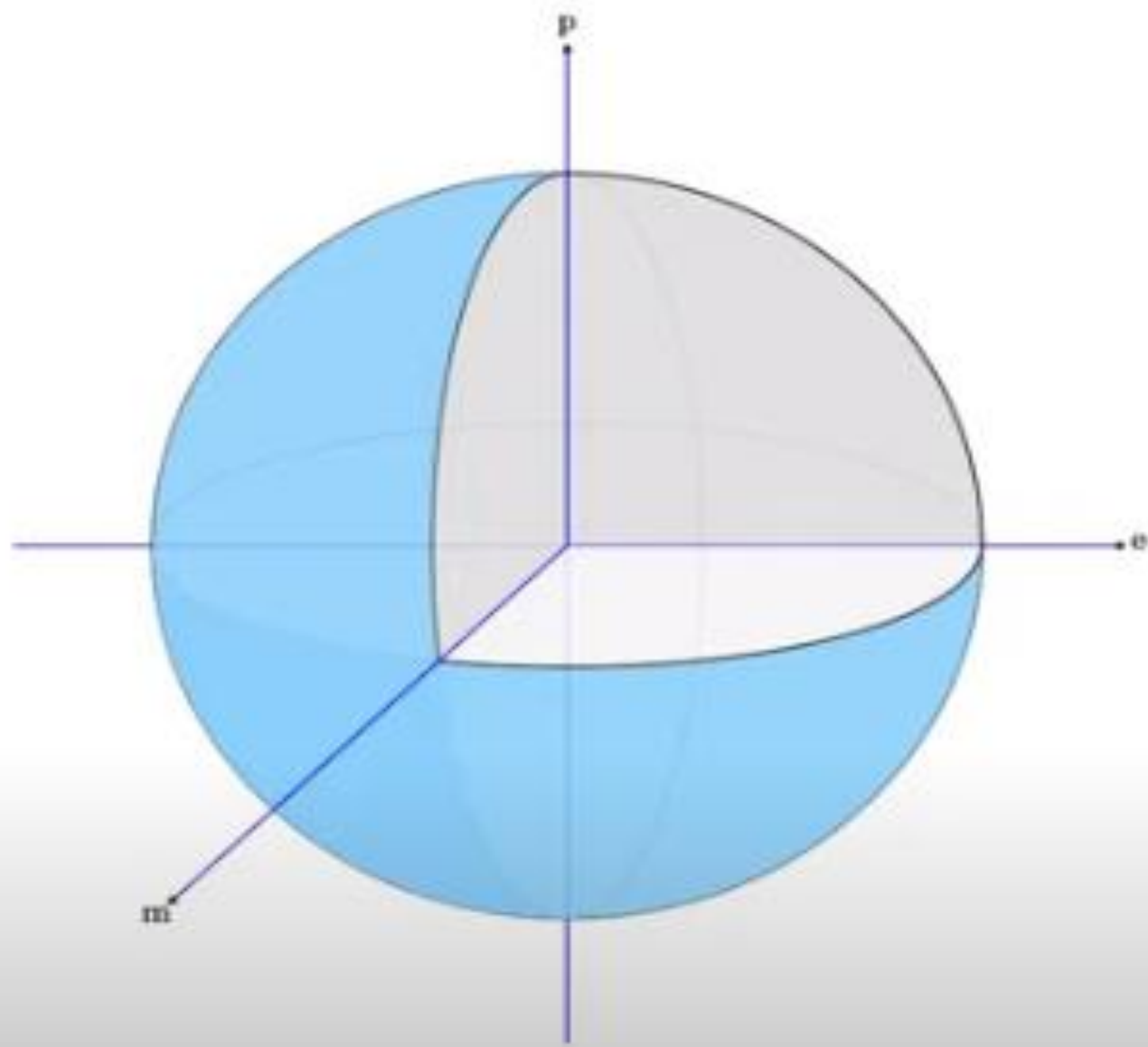
δ - declination
 ω - hour angle



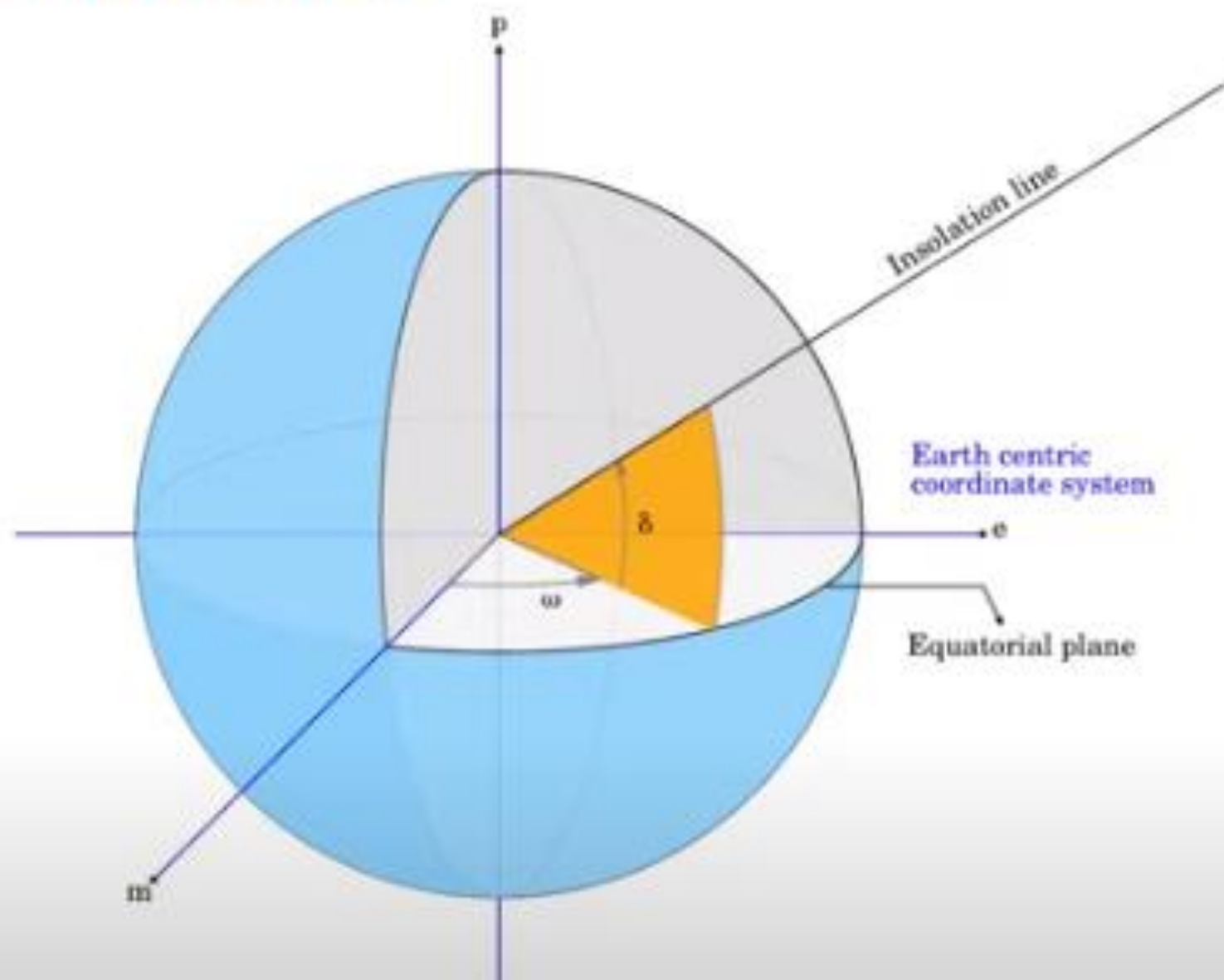
Solar Geometry

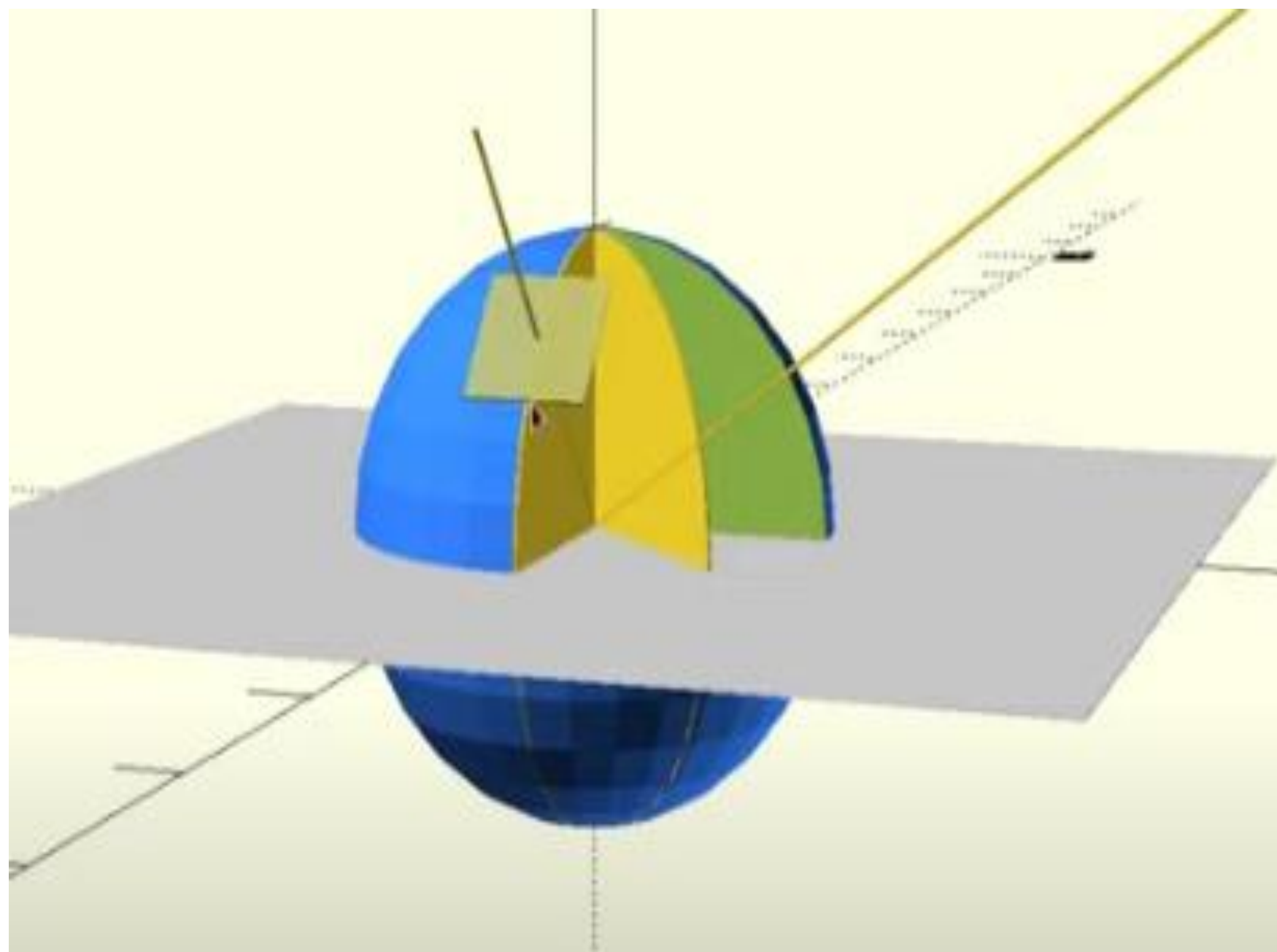


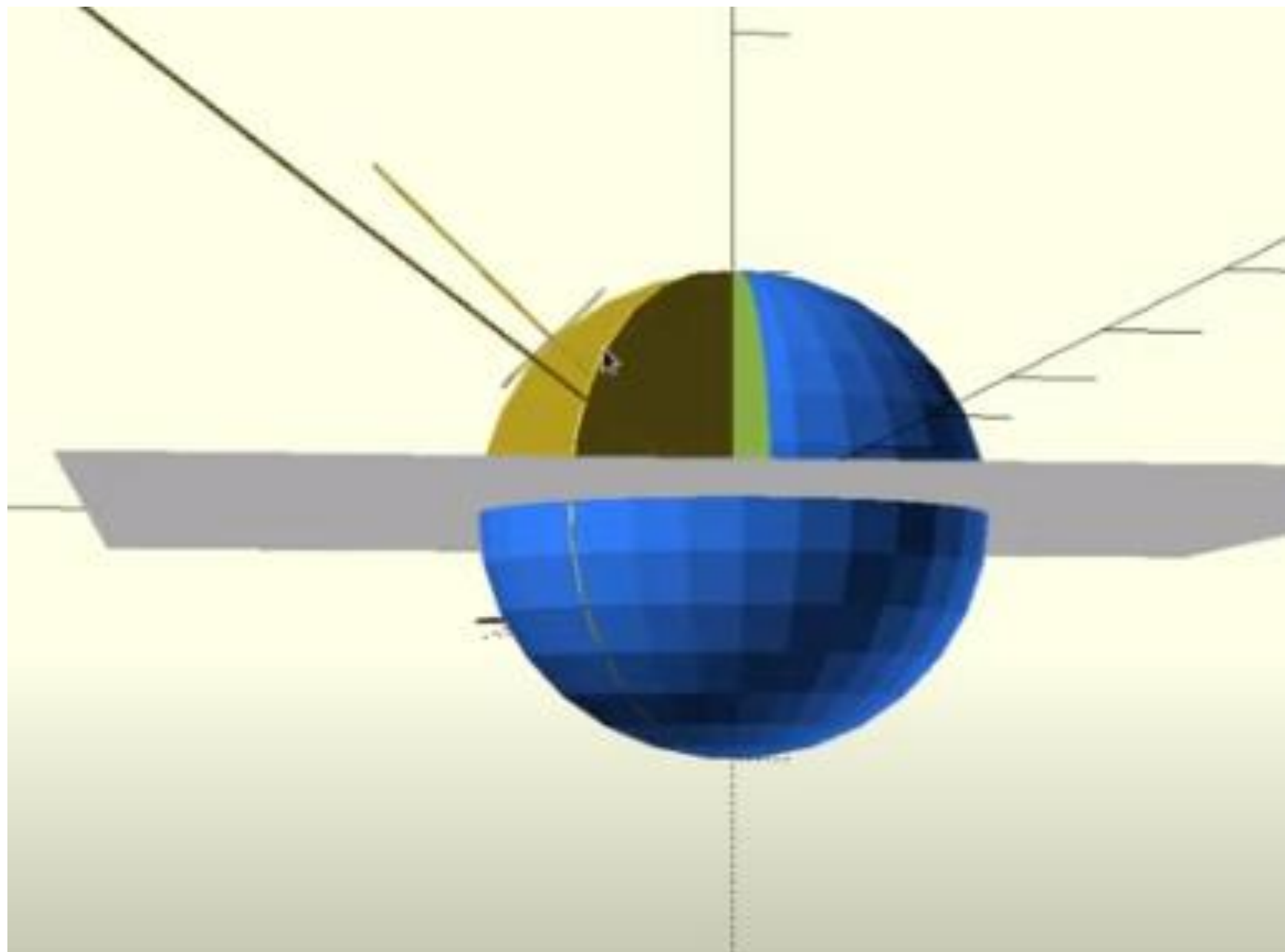
Solar Geometry

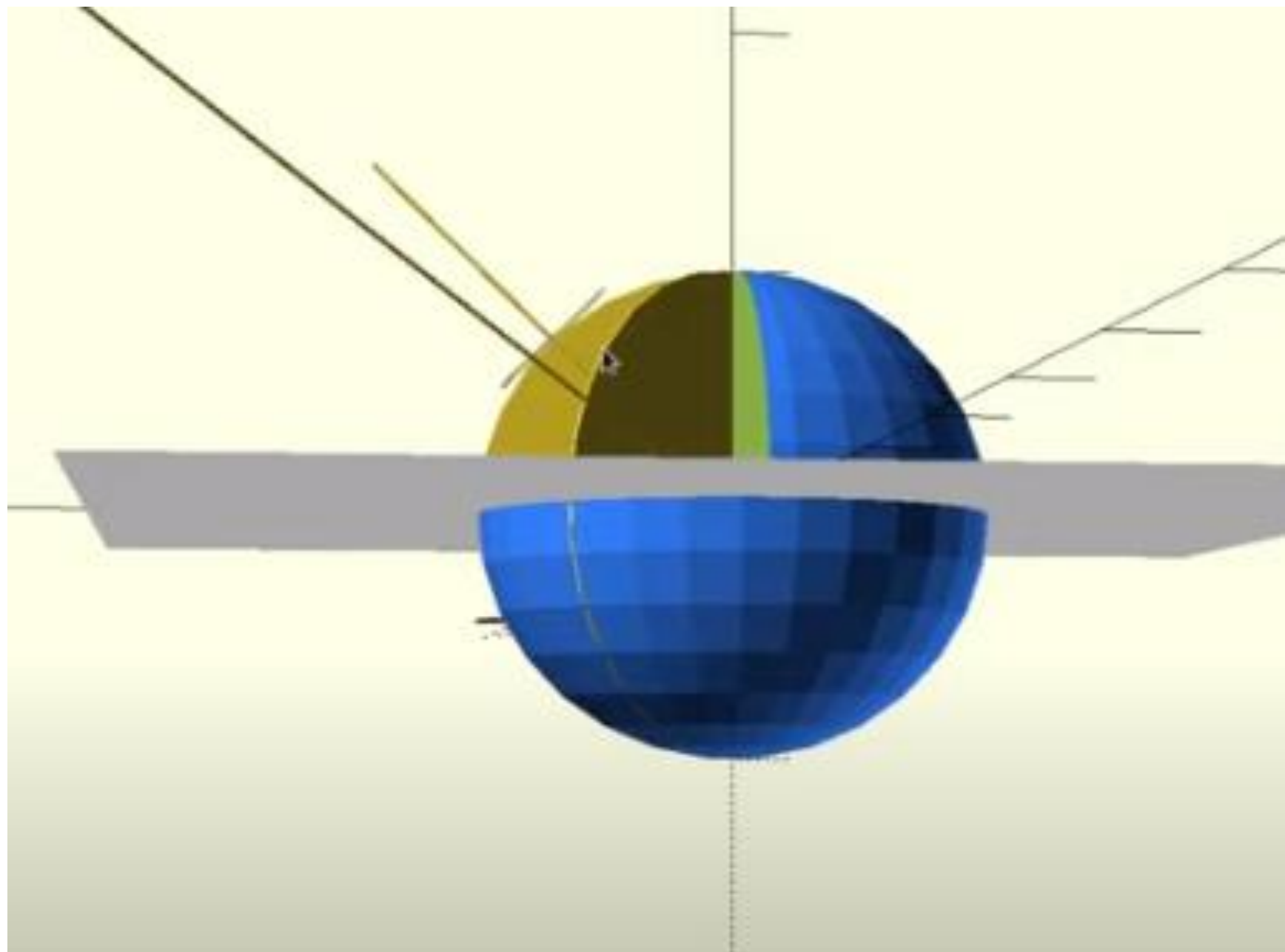


Solar Geometry

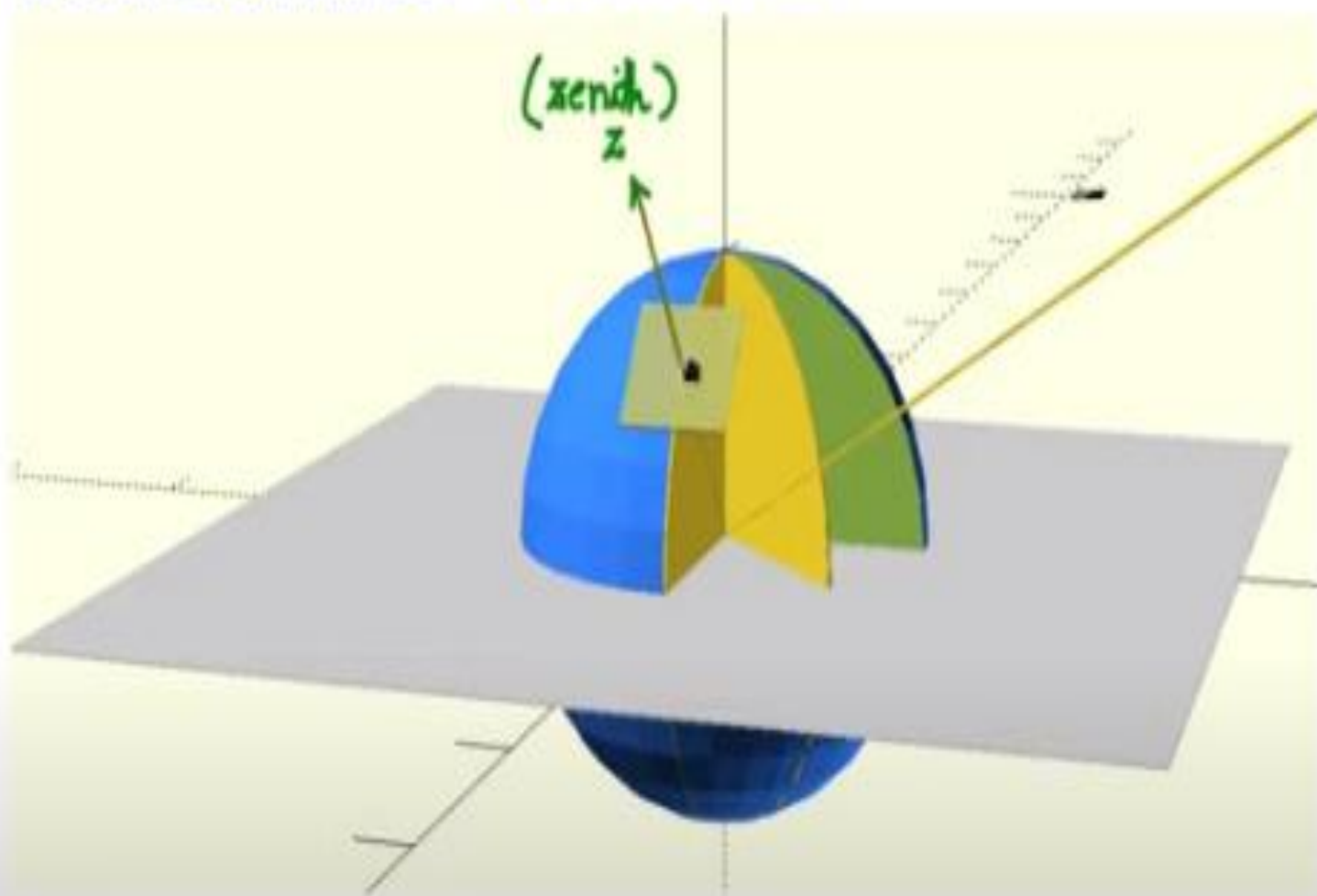




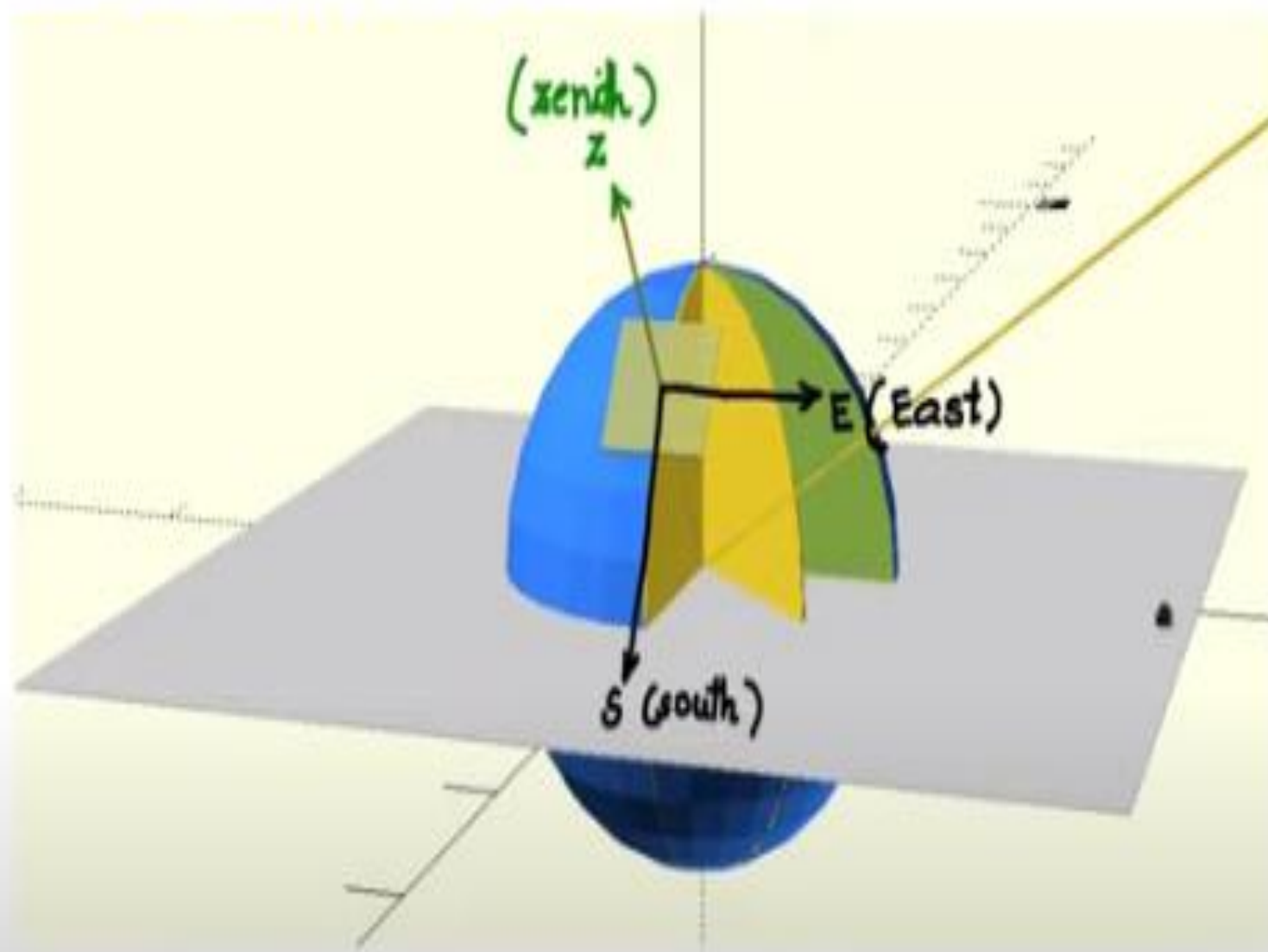


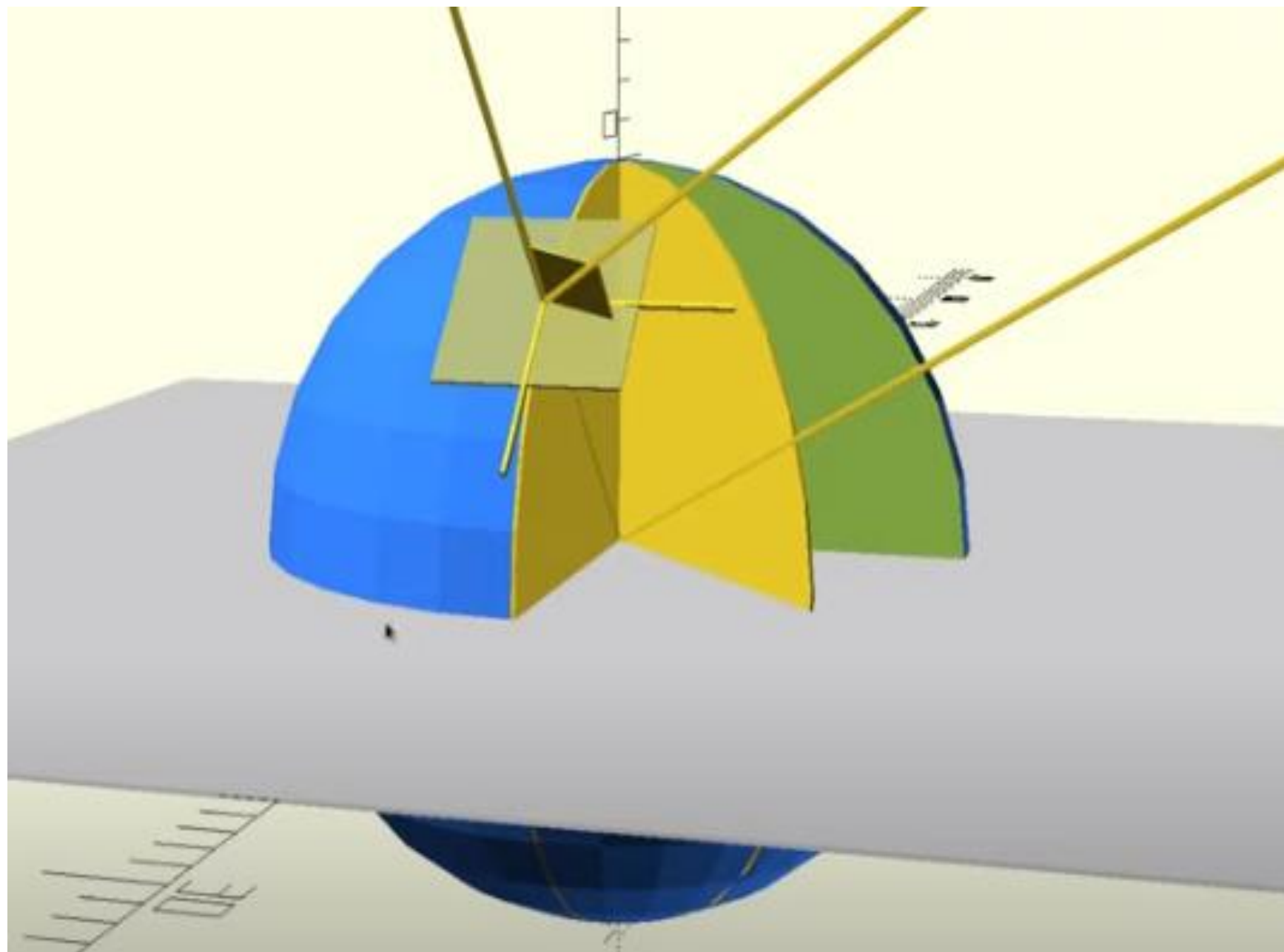


LOCALE CENTRIC COORDINATES



LOCALE CENTRIC COORDINATES





Solar Geometry

