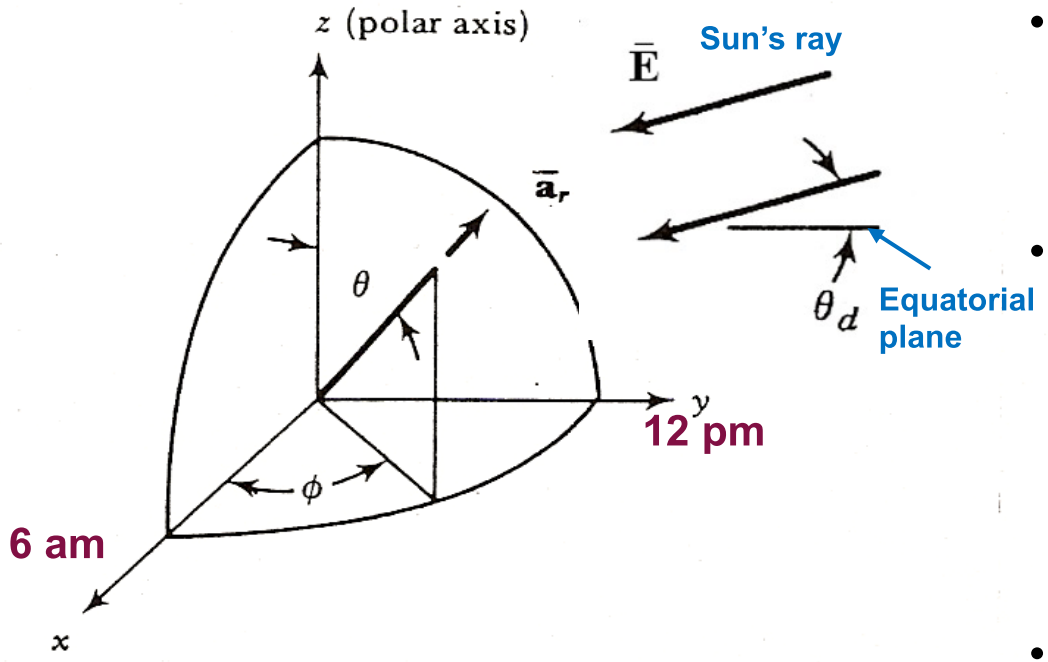
SOLAR POSITION AND ANGLE OF INCIDENCE



- θ_d is the *angle of declination* of the sun, which is the angle between the sun's rays and the equatorial plane. The value is between $+23.5° > \theta_d > 23.5°$

- ϕ is the *azimuthal angle*, the angle between the geographic north and the vertical circle through the centre of the sun. which changes as the earth rotates about its axis:

  Hour angle = 90° + ϕ (degrees)

  Hour = $\frac{12\,(90 + \phi)}{180}$

- θ is the polar angle, which is determined by the latitude of the point:
  - Latitude (northern hemisphere) = 90° - θ
  - Latitude (southern hemisphere) = θ - 90°