Triple Integral Application
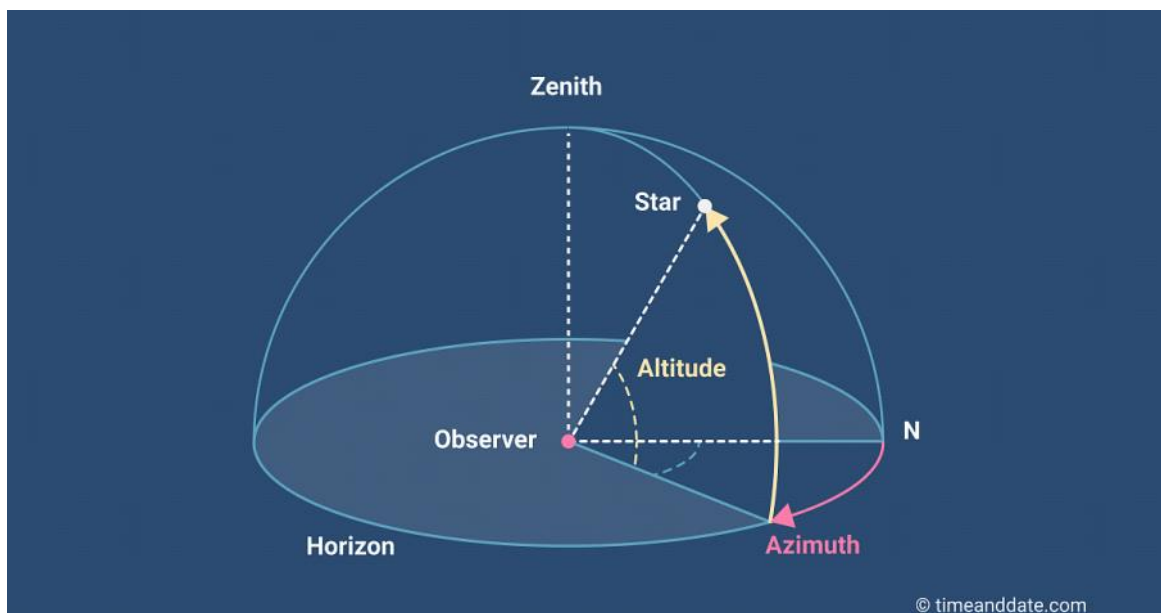
Friday, 28 June 2024   12:10 pm
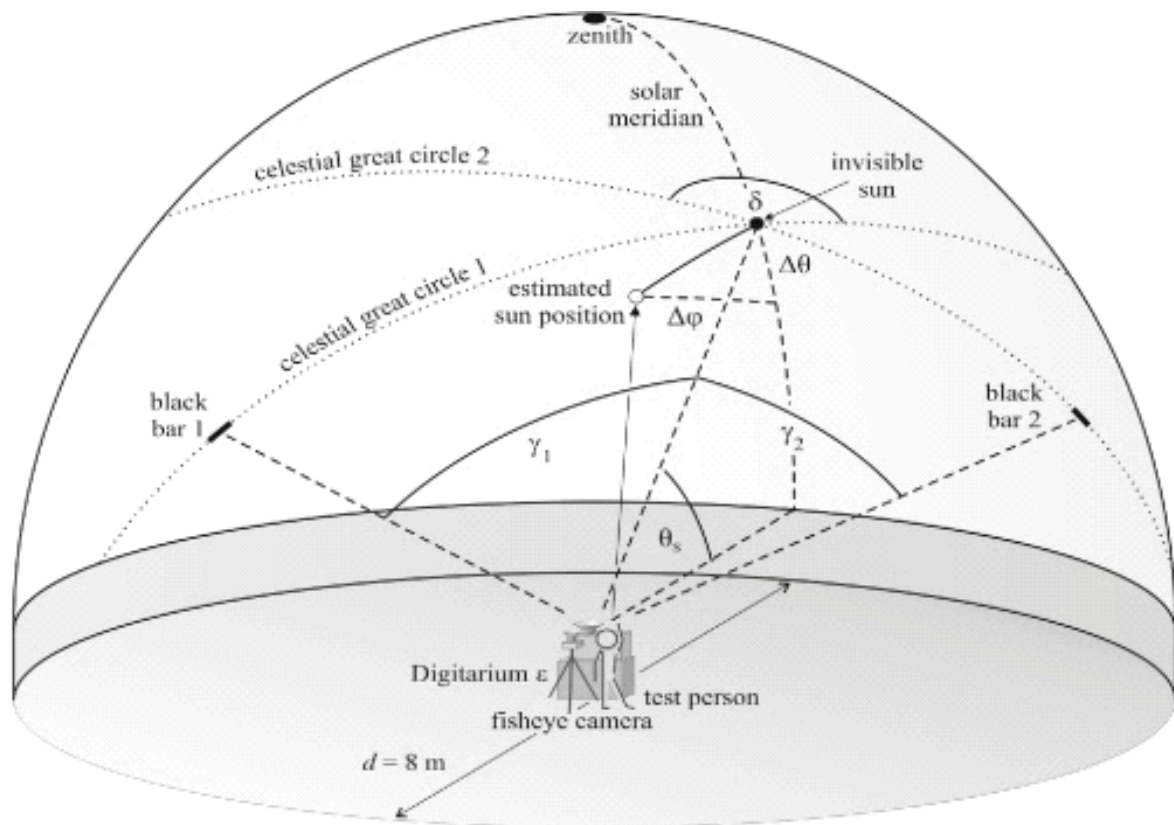
Applications:

1. **Volume of Cylindrical Regions**: Calculating the volume of objects like cylinders, cones, and other shapes with circular cross-sections.

2. **Mass and Density**: Finding the mass of objects with varying density distributed in a cylindrical region.

3. **Electromagnetic Fields**: Solving problems in electromagnetism where the fields exhibit cylindrical symmetry.

Applications:

1. **Volume of Spherical Regions**: Calculating the volume of spheres, hemispheres, and other spherical objects.

2. **Gravitational and Electric Fields**: Analyzing fields generated by spherical distributions of mass or charge.

3. **Astrophysics**: Modeling celestial bodies and their interactions, such as the distribution of stars in a galaxy.

zenith

solar meridian

celestial great circle 2

celestial great circle 1

invisible sun

δ

Δθ

estimated sun position

Δφ

black bar 1

black bar 2

γ₁

γ₂

θ_s

Digitarium ε

test person

fisheye camera

d = 8 m

Robot Configuration

Cartesian Co-ordinate Configuration	Cylindrical Configuration	Spherical Configuration	