04. Assume that light of wavelength $6000 \overset{o}{A}$ is coming from a star. What is the limit of resolution of a telescope whose objective has a diameter of 100 inch?

Sol. A 100 inch telescope = 254 cm. Thus if,

$$\lambda = 6000A = 6 \times 10^{-7}\text{m}$$

then

$$\Delta\theta = \frac{1.22 \times 6 \times 10^{-7}}{254 X 10^{-2}} = 2.9 \times 10^{-7} \text{ radians}$$