

class 23 ch 36 35, 62

$$35 \quad 2d \sin \theta = m\lambda \quad d = \frac{.085 \times 10^{-9}}{\sin(21.5^\circ)} \approx 2.32 \times 10^{-10} \text{ m} = 2.32 \text{ \AA}$$

$$62 \quad \frac{50 \mu\text{m}}{.25 \text{ m}} = \theta = \frac{1.22 \lambda}{d_{\text{dia}}} = \frac{1.22 (.55 \mu\text{m})}{2 \times 10^{-3} \text{ m}} = 3.36 \times 10^{-4} \text{ rad}$$

"  $2 \times 10^{-4}$  ← slightly too small to resolve

$$\frac{\text{size}}{.25 \text{ m}} = 3.36 \times 10^{-4} \rightarrow \text{size} = \underline{84 \mu\text{m}}$$

$$3.36 \times 10^{-4} \text{ rad} \times \frac{180^\circ}{\pi \text{ rad}} \times \frac{60'}{1^\circ} = 1.16'$$

IF eye diffraction limited & dia = 2mm  
diffraction limits resolution