Phys 5B:

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- $E_{\mathbb{I}} = E_0 \cos\Theta \Rightarrow I \sim E_{\mathbb{I}}^2 \Rightarrow I = I_0 \cos^2\Theta$
- Polarized by relfectio Brester's angle
- Resolution is limited because of diffraction

  the minimum occurs occurs for $\Theta = \frac{1.22\lambda}{D}$

  Rayleigh's criteriom for resolving images central maxima must be at least as far apart as the distance to minima
- Example:

  Spy satellite 36,000km high has alens diameter .5m. What resolution does satellite have??

  $l\Theta = \frac{1.22\lambda l}{d} = \frac{1.22(550\text{nm})\,36\text{Mm}}{.5m} = 44m$
- Telescopes: reqiores D aperatures from scamll Θ D=1m (refractor) to 30m TMT

  star is 16 ly away are barely resolved by our telescope that is 66cm reflector! How far apart are the stars??

  $l\Theta = \frac{1.22\lambda l}{D} = \frac{1.22(550\text{nm})}{.66m}\,16\text{ly} \approx 1.6 \times 10^{11} m$