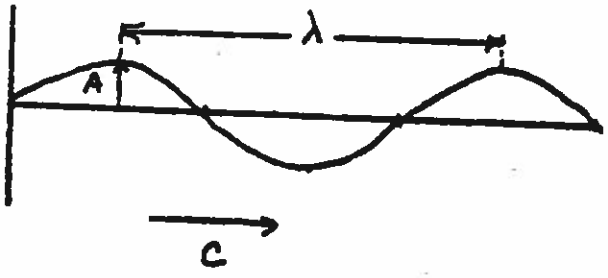
DEPARTMENT OF ASTRONOMY
University of Florida

AST 1002

LIGHT



A = amplitude

λ = wavelength

c = velocity

f = frequency

$f = \frac{c}{\lambda}$

units: f = cycles/sec (Hertz)

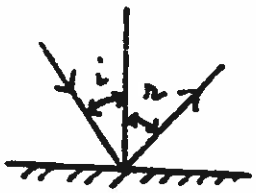
λ = angstroms (Å) (10^{-8} cm)

λ = 3800 Å blue (For light)
→ 7600 Å red

c = 186,000 miles/sec
= 3 x 10^8 meters/sec

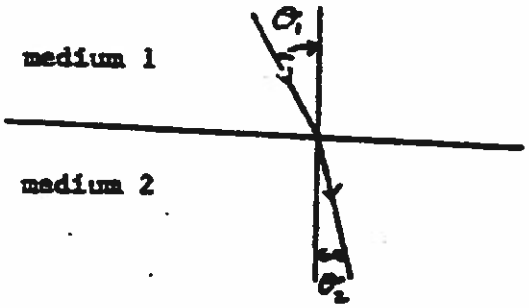
c = meters/sec, km/sec or miles/sec

Reflection



$i = r$ for specular reflection

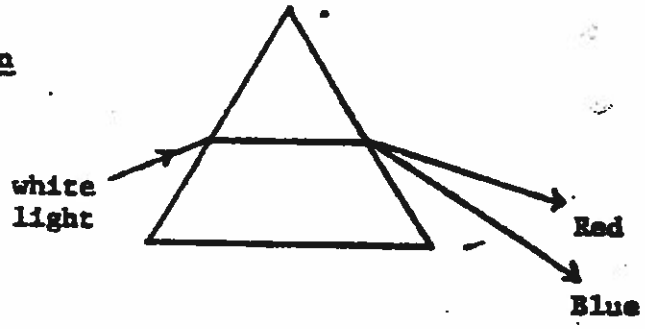
Refraction



$n = \frac{c_{vacuum}}{c_{medium}}$ = index of refraction

$n_1 \sin\theta_1 = n_2 \sin\theta_2$ Snell's law

Dispersion



The blue light is bent more than the red light since n = n(f) i.e. the velocity of light depends on the frequency.