

PHY385-H1F Introductory Optics

Class 5 – Outline: Sec. 3.5, 3.6, 3.7

- Emission
- Selective Absorption
- Dispersion
- The dispersion equation
- The Electromagnetic Spectrum

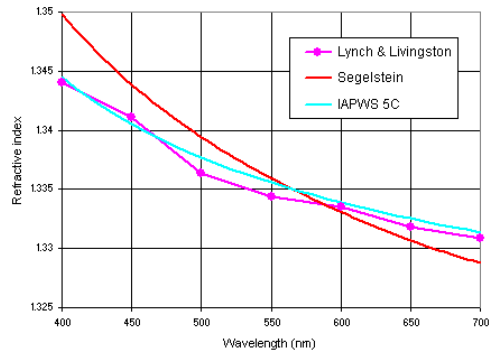
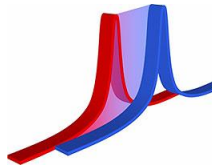
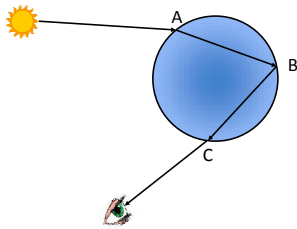


Fig. 1 Refractive index of water as a function of wavelength

Rainbow Discussion Question

A ray of white light from the sun enters a tiny spherical water droplet suspended in the air. After the ray enters at point A, is the red beam below or above the blue beam?

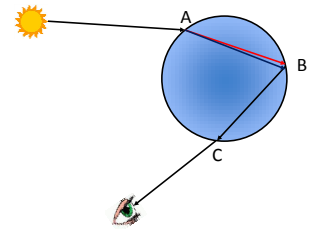
1. Below
2. Above
3. Both
4. ..not sure



Rainbow Discussion Question

A ray of white light from the sun enters a tiny spherical water droplet suspended in the air. After the rays reflects at point B, is the red beam below or above the blue beam?

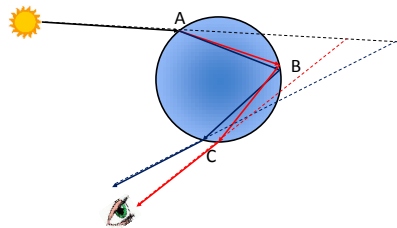
1. Below
2. Above
3. Both
4. ..not sure



Discussion Question

A ray of white light from the sun enters a tiny spherical water droplet suspended in the air. After the rays refracts back into the air at point C, which beam has **turned** by a greater angle?

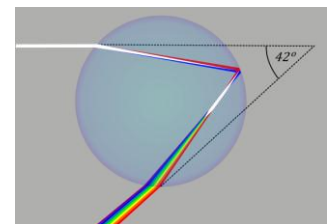
1. Red
2. Blue
3. ..not sure



Discussion Question

When you look away from the sun, you see a rainbow in a big arc surrounding the anti-sun, with a radius of about 42°. Normally the bottom half of the circle is below the horizon, since the anti-sun is below the horizon. Which colour is at the top of the rainbow?

1. Red
2. Blue
3. ..not sure



Double-rainbow

The second rainbow has blue on the top, and a radius of about 53°

