

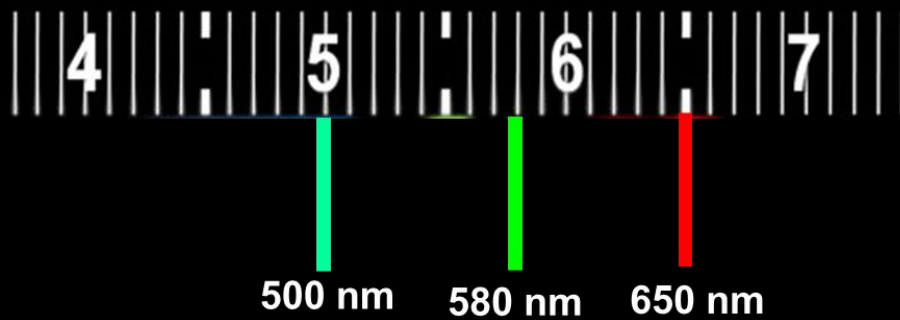
Spectroscopy Lab

Background and Spectra

The spectroscope that you will be using in this lab looks like the one pictured to the right. A spectroscope is similar to a prism in that it can break up light into its components. At one end of the spectroscope is a square film of material that acts like a prism. The film is called a diffraction grating. It is made by putting thousands of grooves on a plastic film. This bends the light coming through it and, in essence, causes the light to spread out into its different wavelengths of light (colors). This is the end of the spectroscope you look through.



READING SPECTRA



Look at the spectrum of the three lines above. The visible light spectrum ranges from wavelengths of about 400 nm to 700 nm. Notice that the labels on the scale that you will see in the spectrograph are hundreds of nanometers (a nm is a billionth of a meter). The teal line has a wavelength of 500 nm; the green line has a wavelength of 580 nm; and the red line has a wavelength of 650 nm.

EMISSION SPECTRA

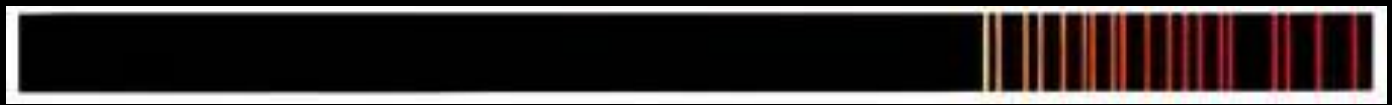
Hydrogen



Helium



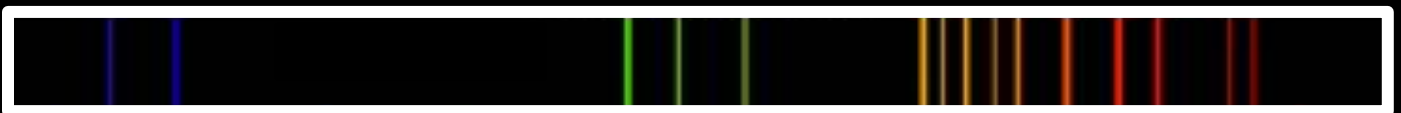
Neon



Mercury



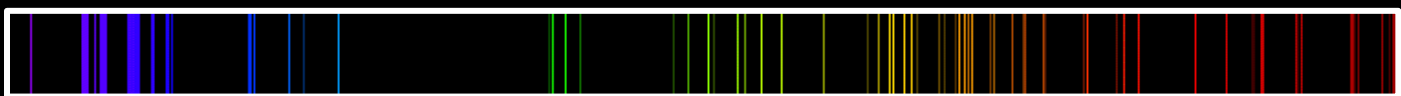
Oxygen



Nitrogen



Argon



USE THE IMAGE BELOW FOR THE CONCLUSION SECTION OF YOUR LAB



CINEMA