

Name: _____

Spectroscopy

Table: _____

At each table are discharge lamps, gas tubes, and spectroscopes, which we will use to observe different kinds of spectra.

1. Take a spectroscope, and aim the slit at the small circular lights above each table. The spectrum will appear off to the side. What does this spectrum look like?

2. Now point the slit of your spectroscope at the fluorescent lights in the ceiling. You should see five bright emission lines. Write down their colors from shortest to longest wavelength. You should be able to see a wavelength scale on the inside of your spectroscope along the spectrum.

3. There are several different gas tubes in the discharge lamps around the room. For each of the following, look at the gas carefully and write down the colors and wavelengths of the brightest lines. You should write the wavelength in microns (μm) with two significant digits. As an example, the bright red line produced by the hydrogen is at $0.66 \mu\text{m}$.

Element:	Hydrogen (H)		Helium (He)		Mercury (Hg)	
Lines:	<u>color</u>	<u>λ (μm)</u>	<u>color</u>	<u>λ (μm)</u>	<u>color</u>	<u>λ (μm)</u>
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____

4. Find a neon (Ne) tube, and describe what you see.