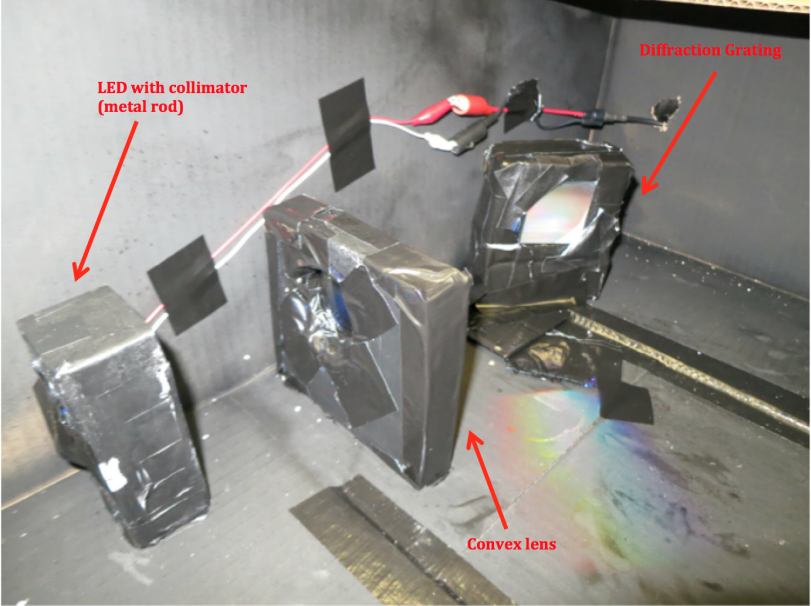
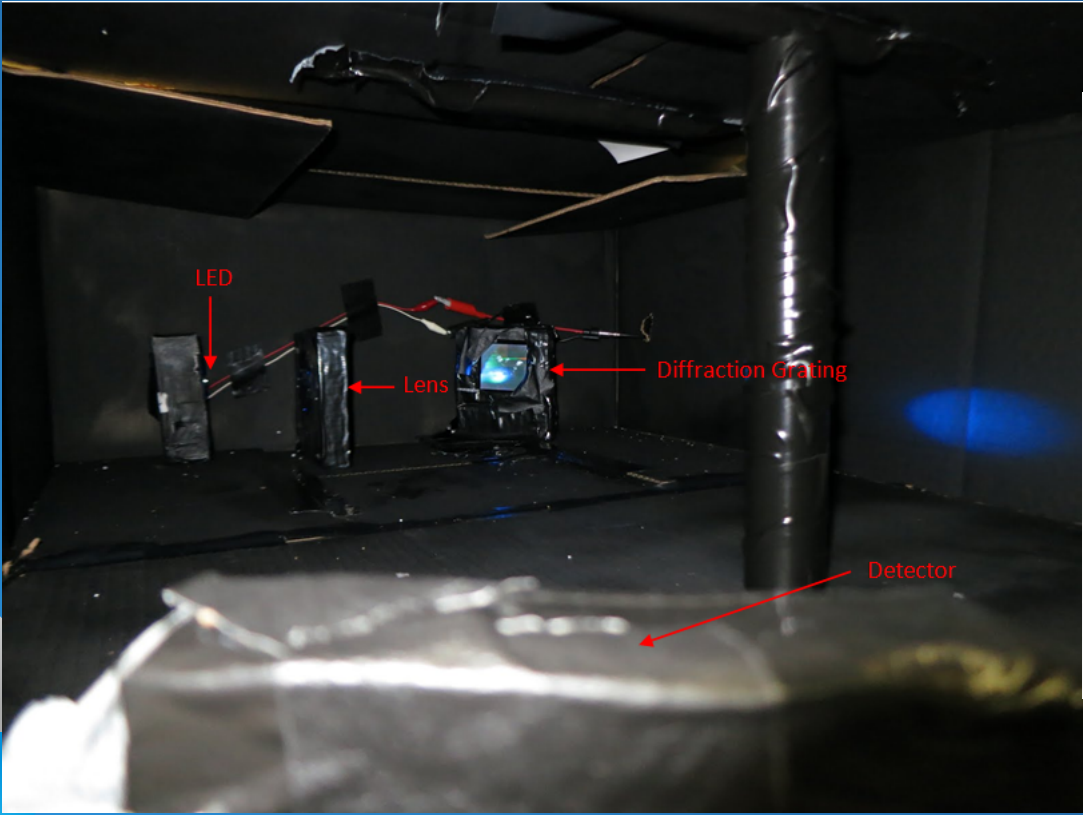


The slide features a dark blue background with decorative geometric patterns on the left and right sides. These patterns consist of overlapping, stylized arrow-like shapes pointing towards the center. The colors used in these patterns are yellow, magenta, cyan, and grey. The central text is white and reads "Update #4" in a large, bold, sans-serif font, with "Buffy and Stephanie" in a smaller, regular sans-serif font below it.

Update #4

Buffy and Stephanie

Inside of Spectrometer



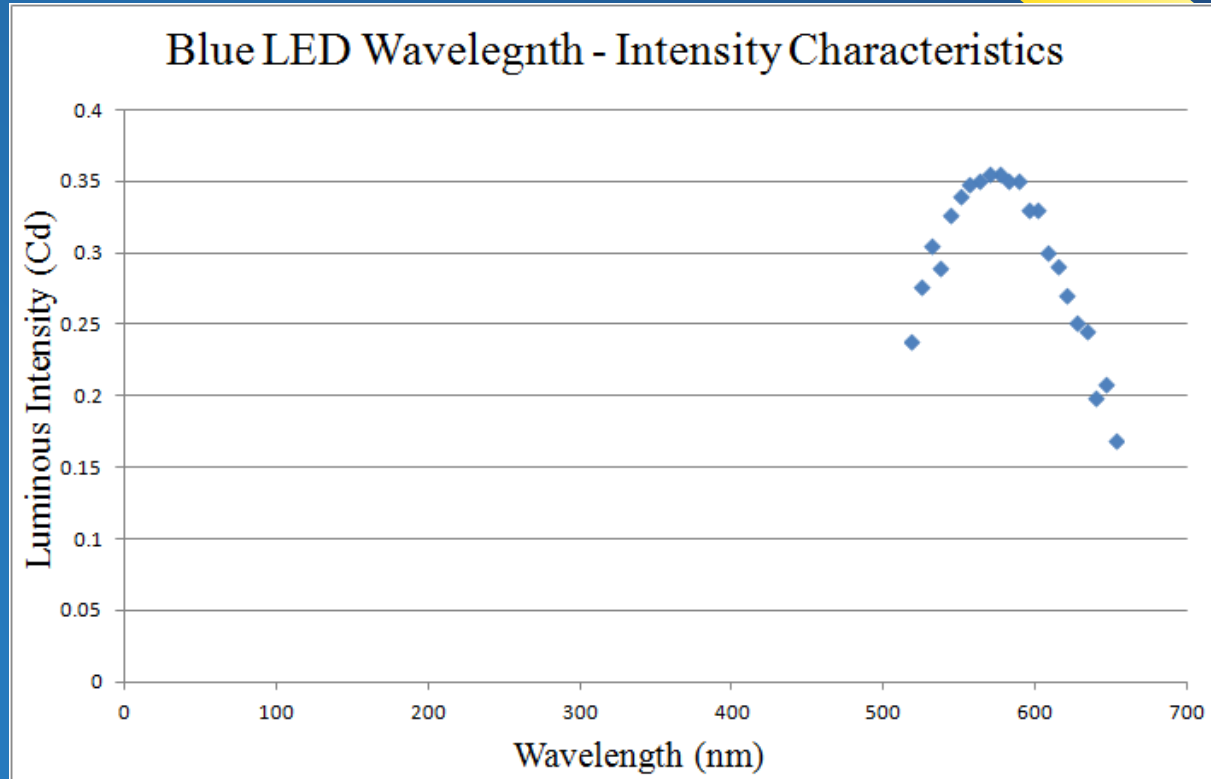
Outside Setup



Data Collection

Test #1

- Systematic error - wavelength off by about 100



Mercury-Vapor Lamp

Calibration

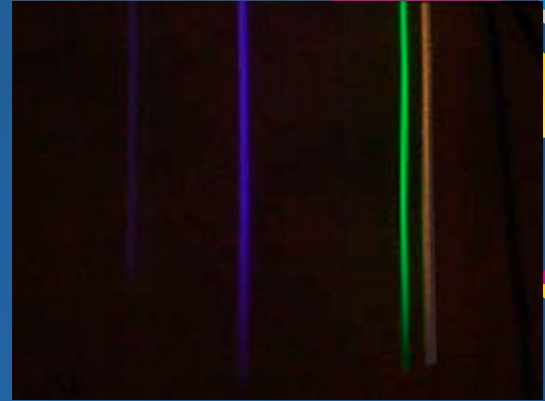
$$\lambda - \lambda_0 = \frac{d (\sin\theta_m + \sin\theta_i)}{m}$$

$$\lambda = -a \sin\theta_i + b$$

$$b \sim \frac{d}{m} \sin\theta_m + \lambda_0$$

$$a \sim \frac{d}{m}$$

- Collimator for mercury lamp



Wavelength (nm)	Name (see photoresist)	Color
184.45		ultraviolet (UVC)
253.7		ultraviolet (UVC)
365.4	I-line	ultraviolet (UVA)
404.7	H-line	violet
435.8	G-line	blue
546.1		green
578.2		yellow-orange

Arduino

- More accurate wavelength measurement and decrease uncertainty/error
- Arduino Uno, Stepper Motor, and Motor Shield

