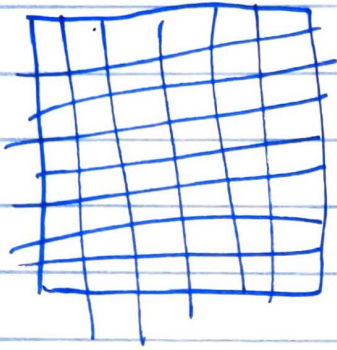
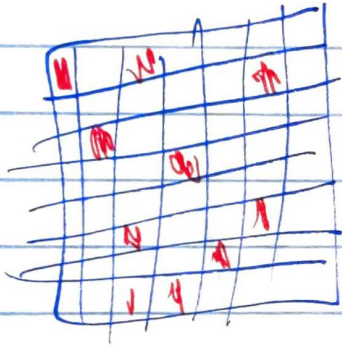


Lecture 19 - Spectral Information

Simple Example - Digital Cameras

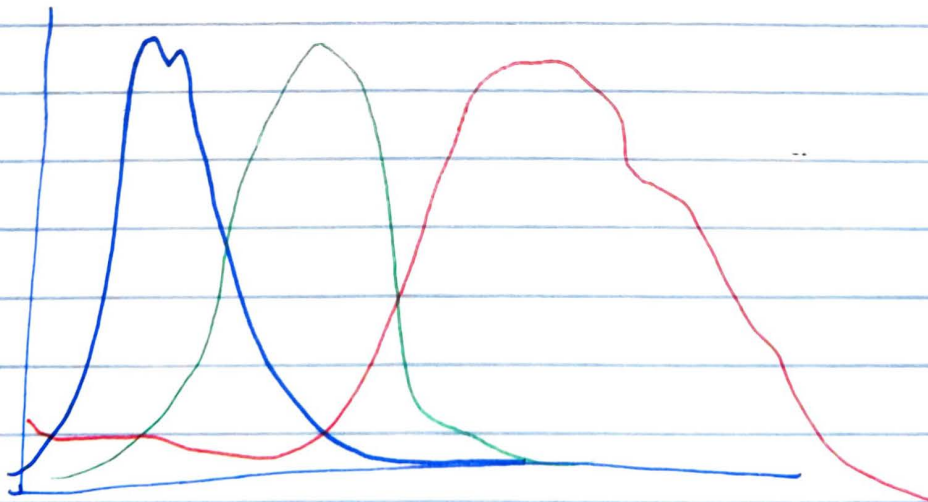


each sensor is $\sim$ broadband,
only cares about # of photons



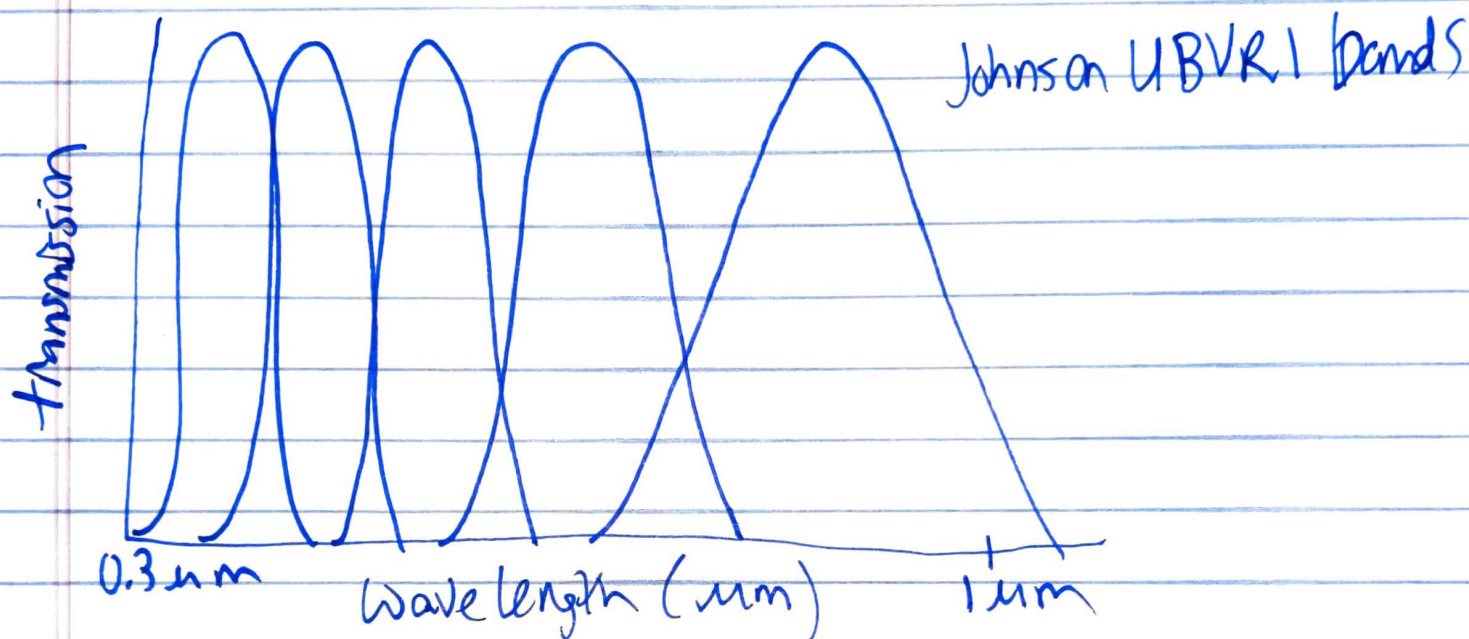
Bayer filter

What are colors?



Photometry in astronomy is measuring the relative intensities of different colors (sometimes absolute intensities - harder)

Each "color" is defined by a passband filter



Defined bands based around objects to observe, and available technology

Used for measuring stars - point sources, with well defined spectra

used certain stars as standards

Remember magnitudes

relative magnitude $m_1 - m_2 = -2.5 \log \left(\frac{f_1}{f_2} \right)$
apparent magnitude: choose "zeropoint" flux
 $m = -2.5 \log \left(\frac{f_{\star}}{f_{zp}} \right)$

convenient shorthand for brightness, use Vega as standard

"Standard Stars"

Difficult to do absolute calibration with early astronomical equipment

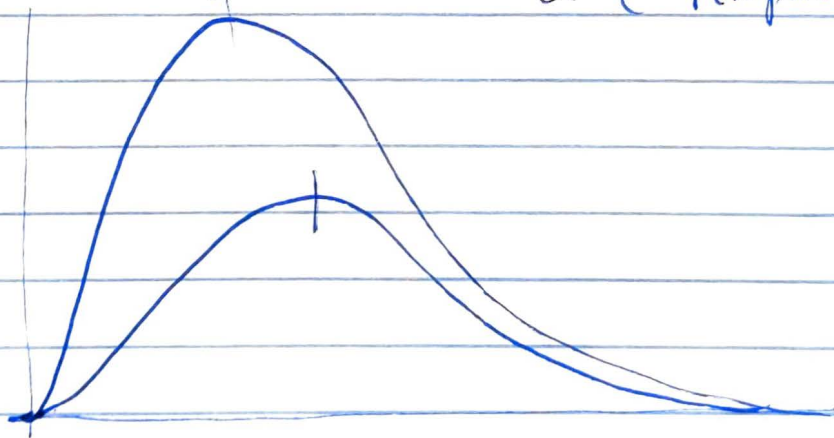
Compare relative brightness with a standard star

Can also compare relative brightness between bands

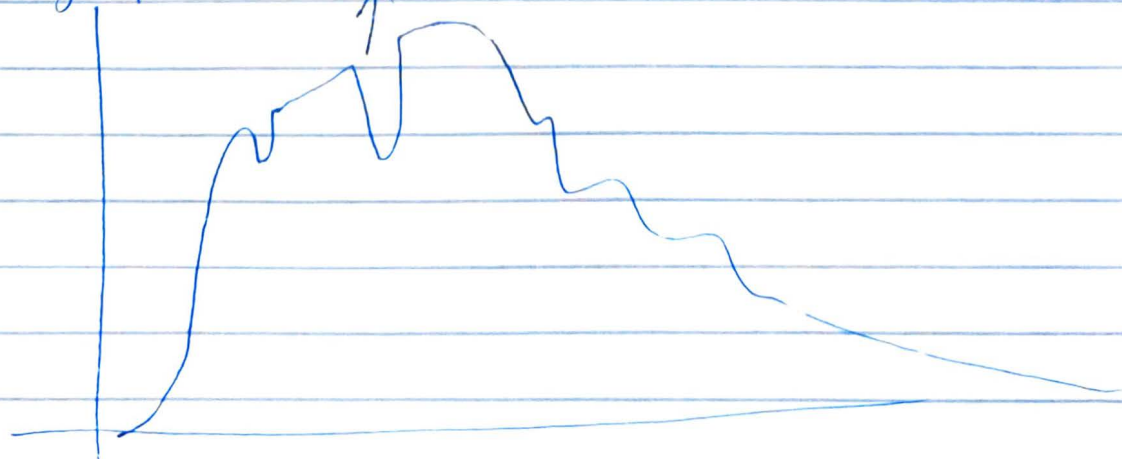
$$C_I = m_B - m_V = B - V$$

Worked well for characterizing stars

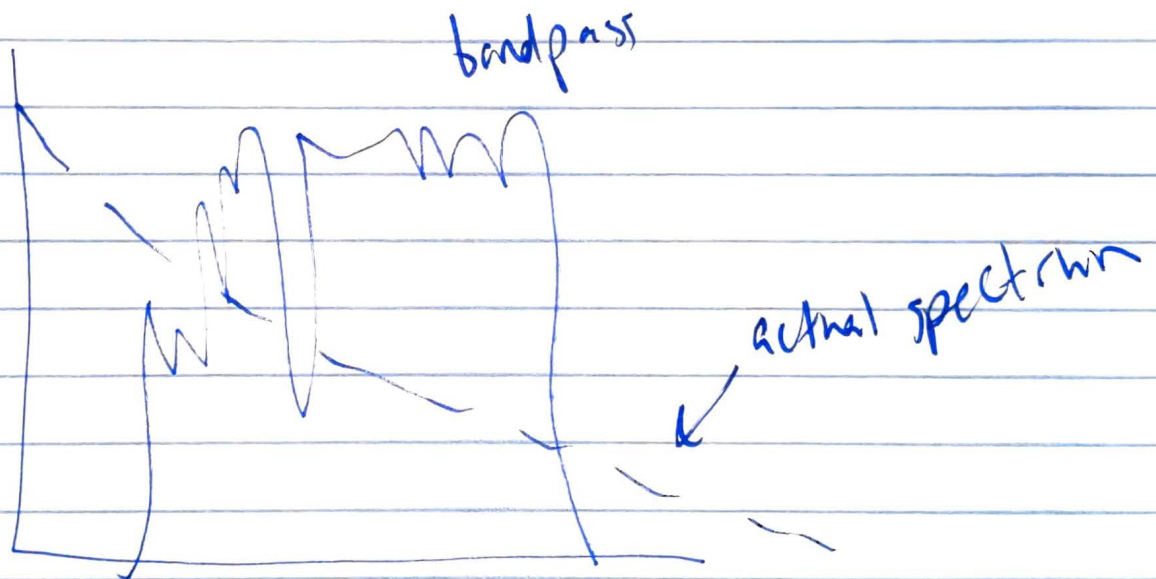
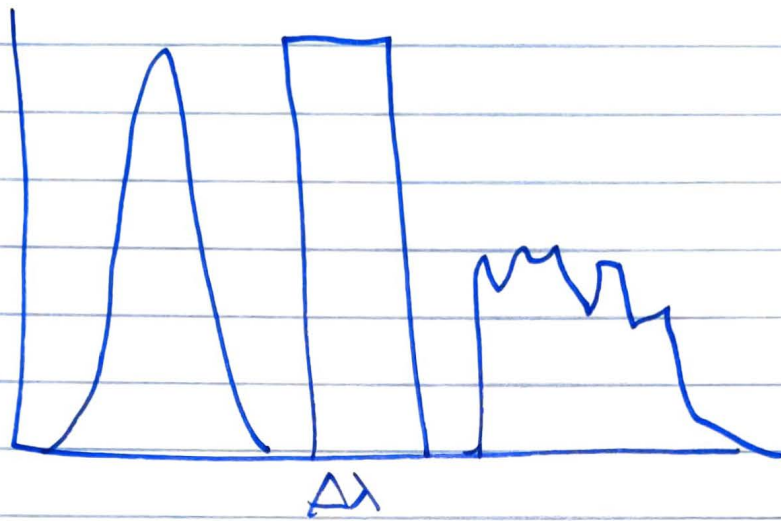
↳ Blackbody spectrum, defined by two parameters
↳ (Temperature, Distance)



Vega, Actual



Passband Filters



Data

