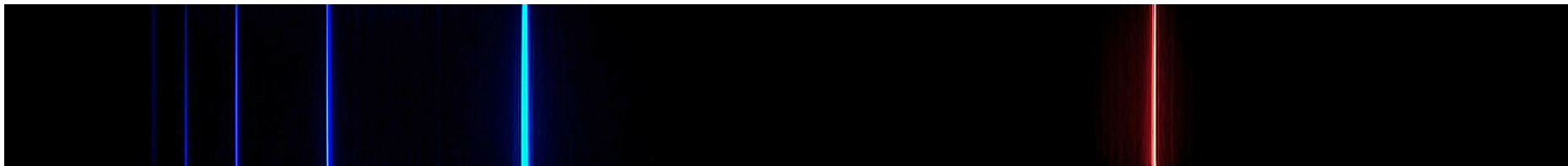


Hydrogen Spectrum



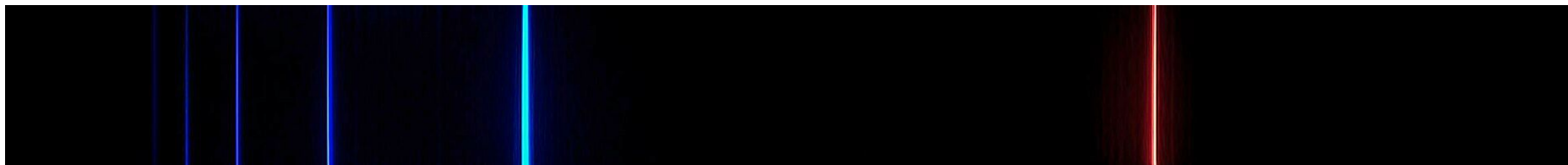
Hydrogen Spectrum

H δ

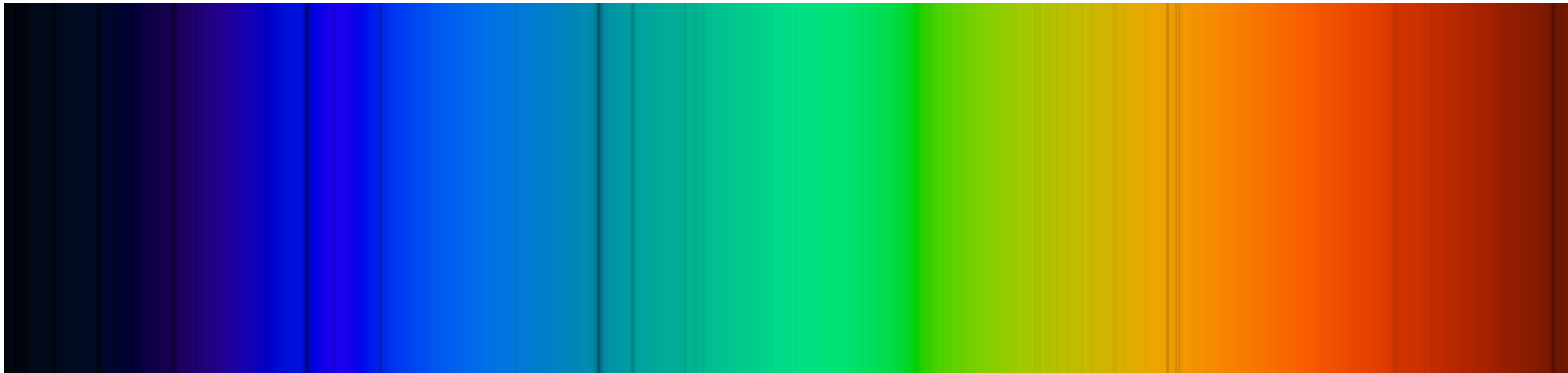
H γ

H β

H α



Hydrogen spectrum in stars!



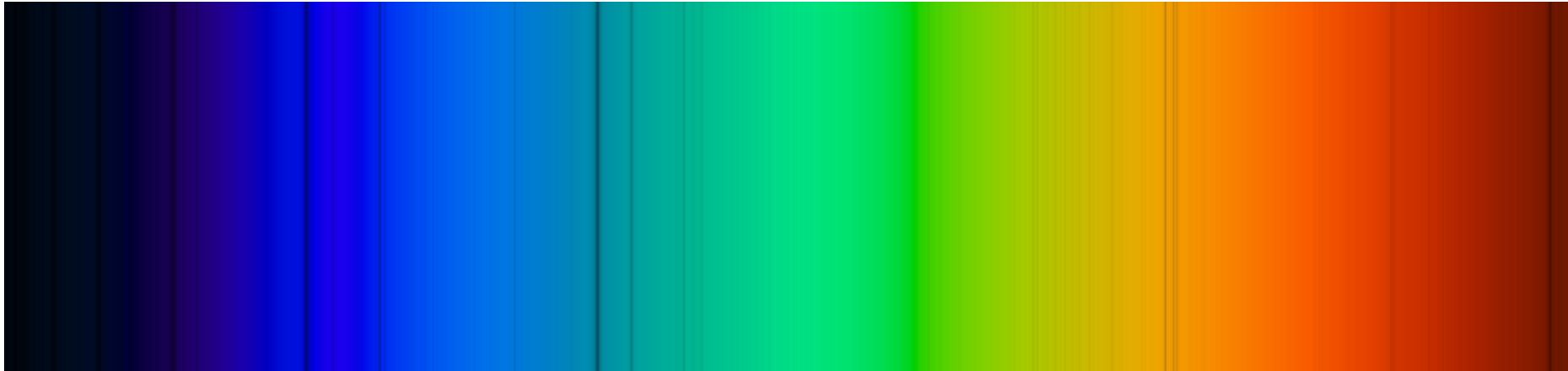
Hydrogen spectrum in stars!

H δ

H γ

H β

H α



Hydrogen Spectrum

H δ

H γ

H β

H α

n = 5

n = 4

n = 2

n = 3

$$\left(\frac{1}{\lambda}\right) = R \left[\left(\frac{1}{2^2}\right) - \left(\frac{1}{n^2}\right)\right]$$
$$R = 1.097 \times 10^7 \text{ m}^{-1}$$

Bohr model problem

1. Singly ionized helium ($Z = 2$) is a hydrogen-like atom
 - a. Find E_2 .
 - b. Find E_4 .
 - c. Find the wavelength of light of the photon emitted from the $n = 4 \rightarrow 2$ e^- transition.