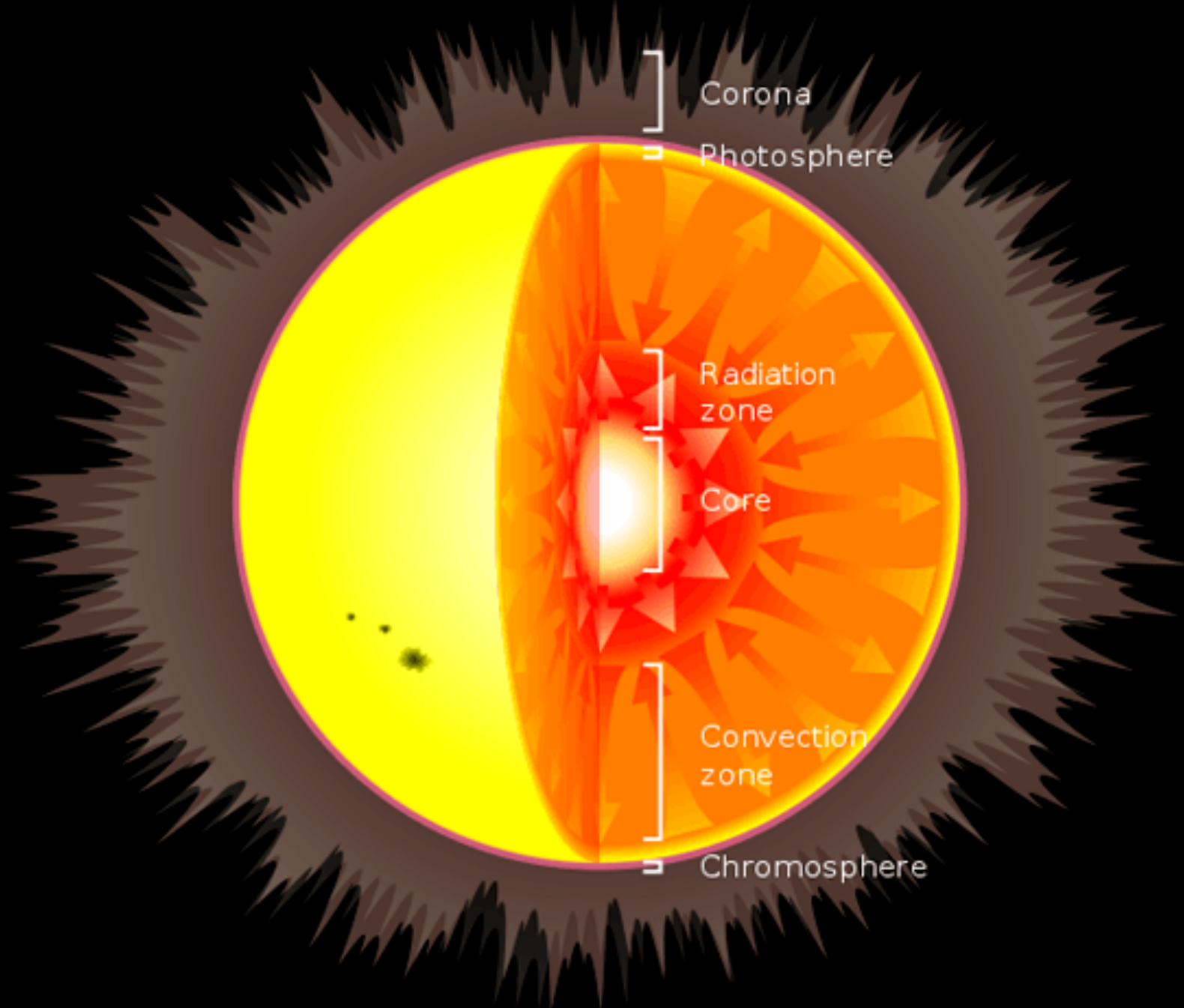


Structure and Evolution of Stars

Lecture 5





Corona

Photosphere

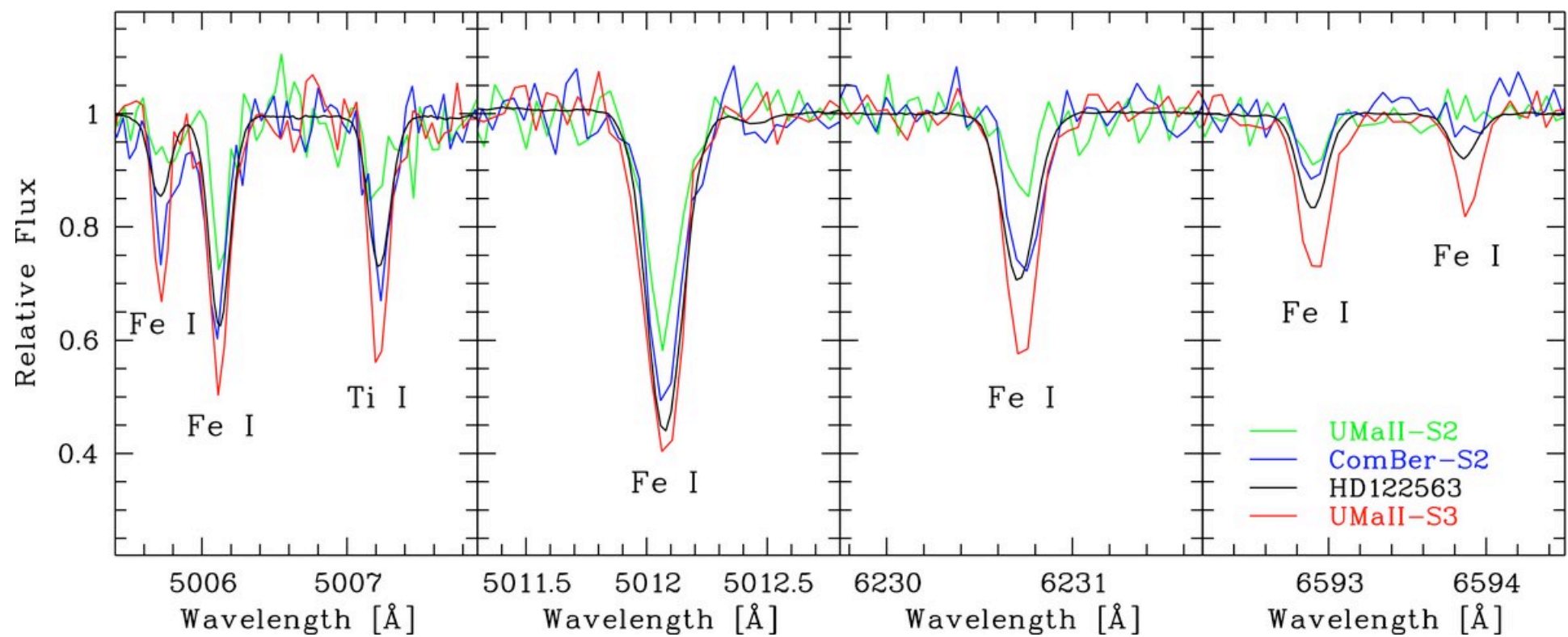
Radiation
zone

Core

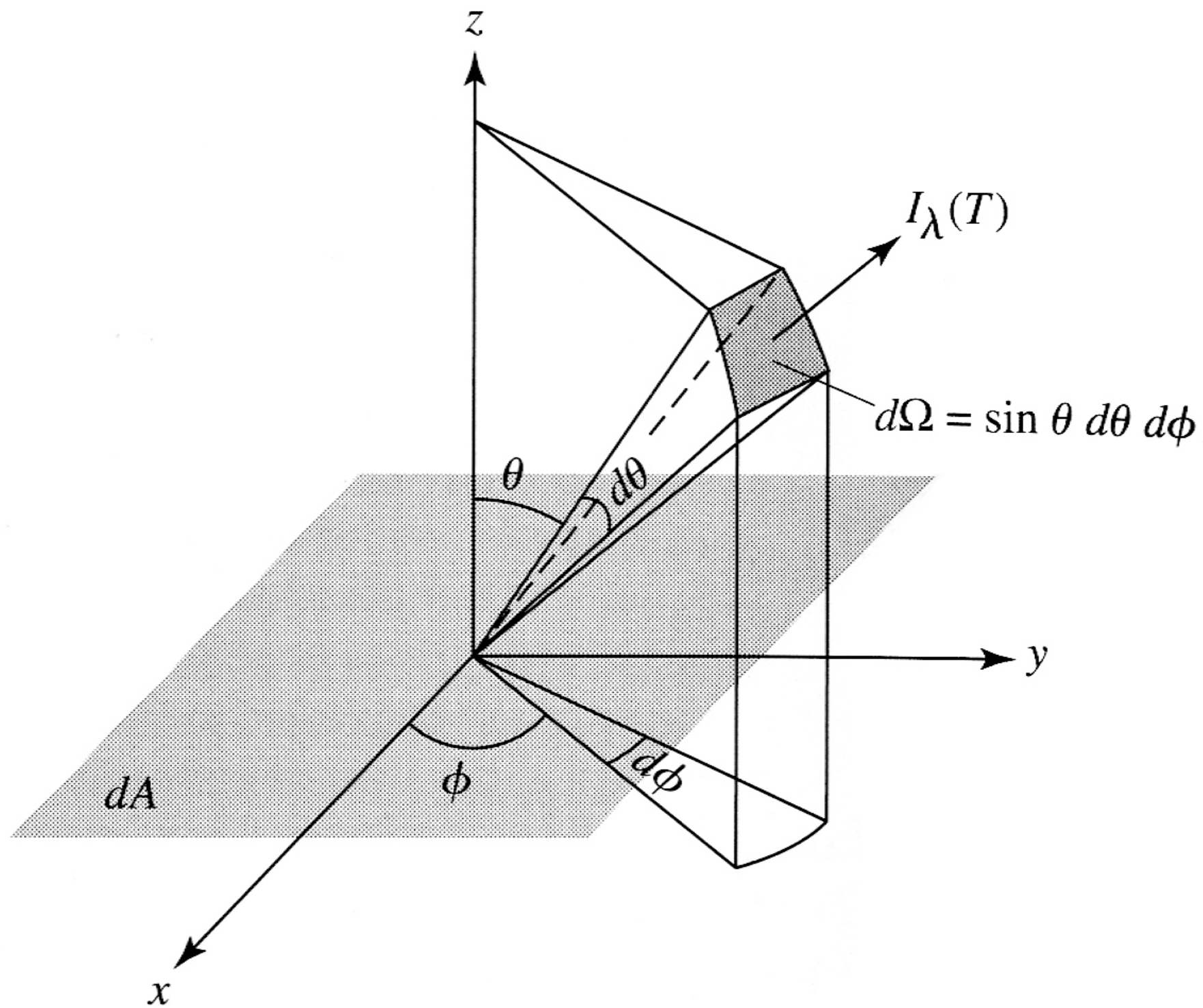
Convection
zone

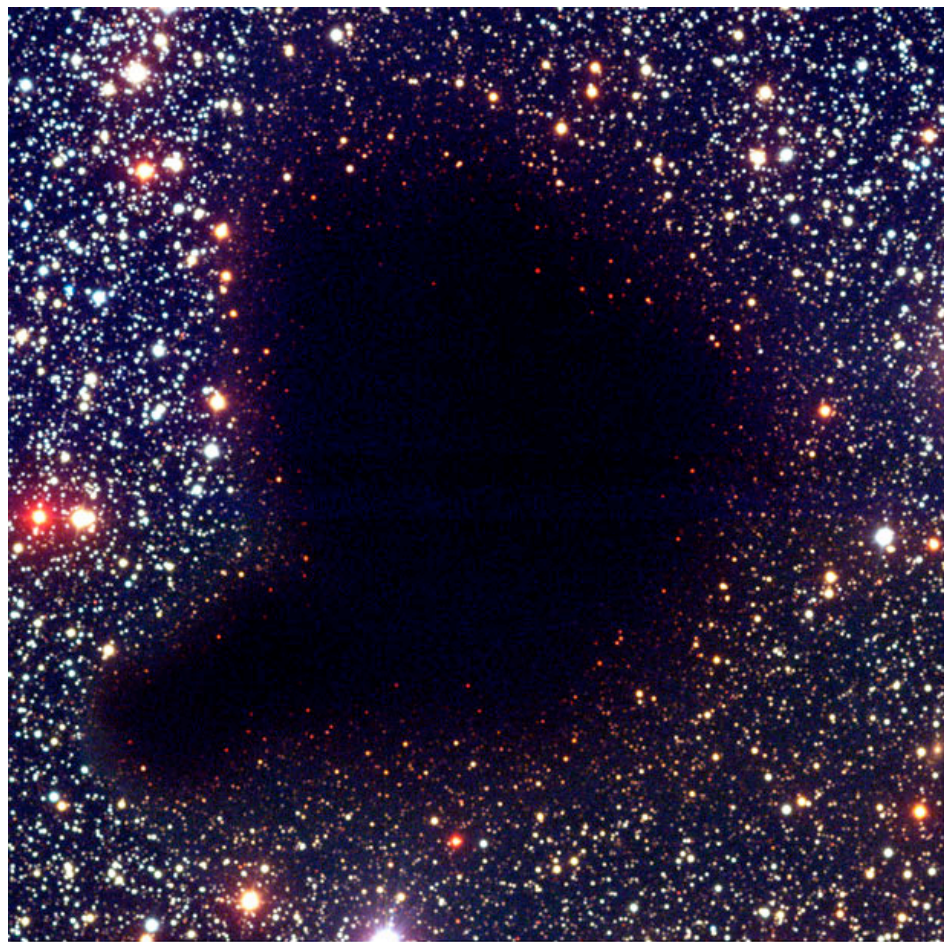
Chromosphere



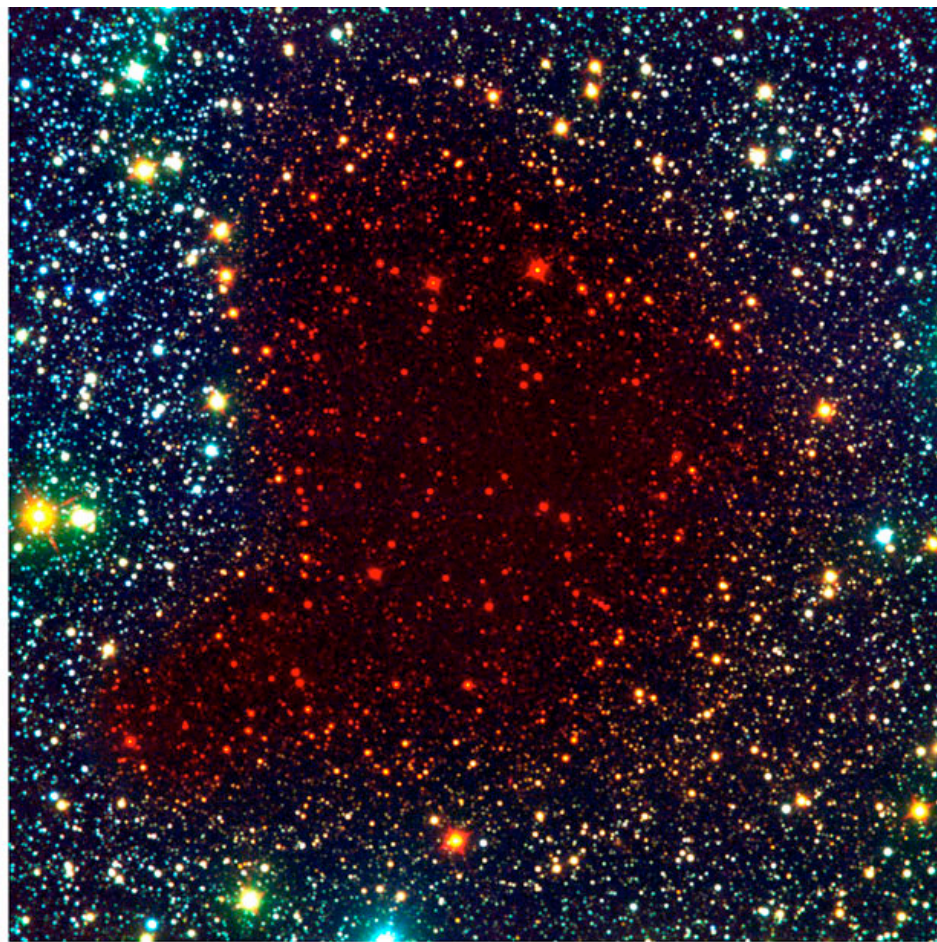


Frebel et al. 2010

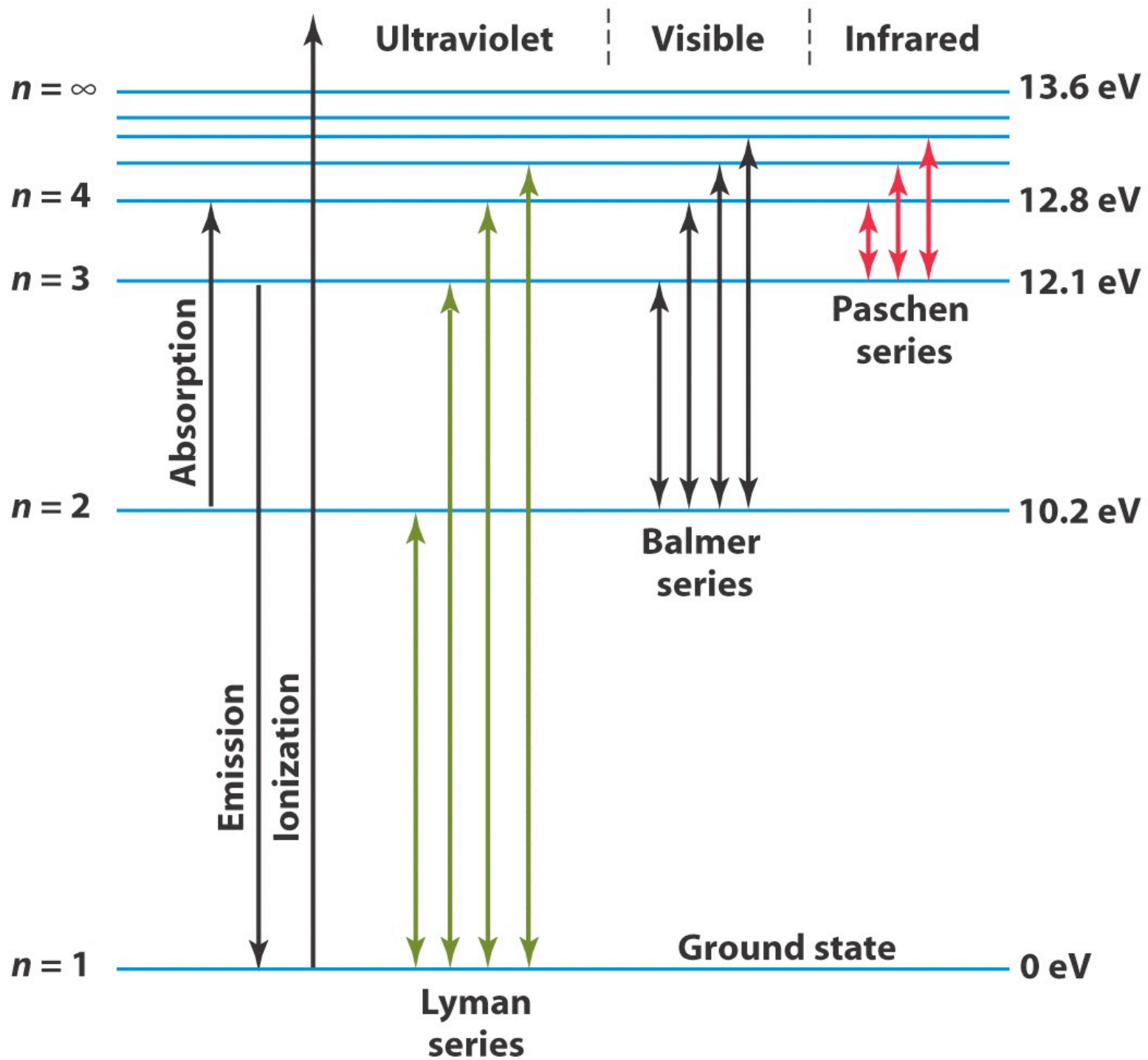


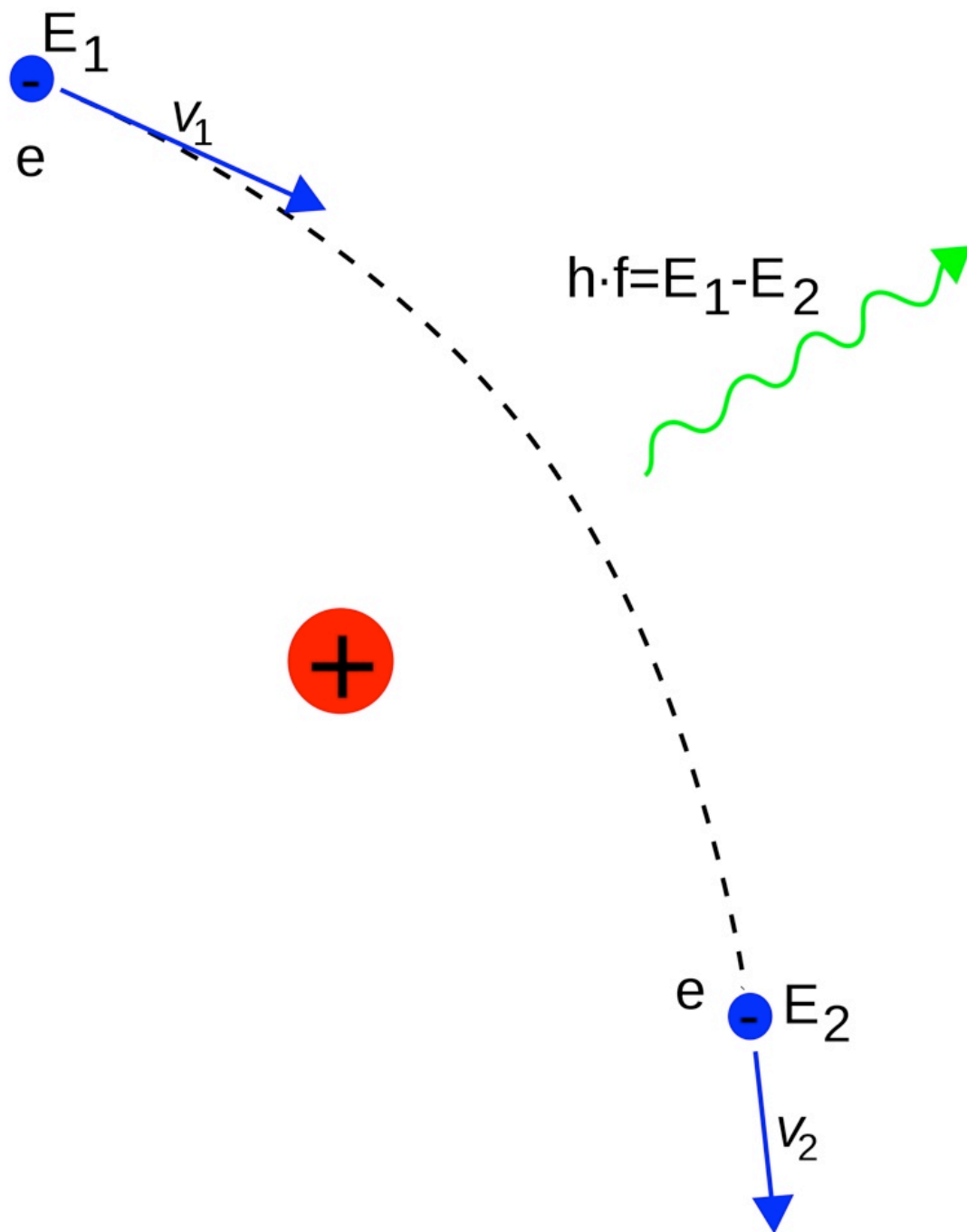


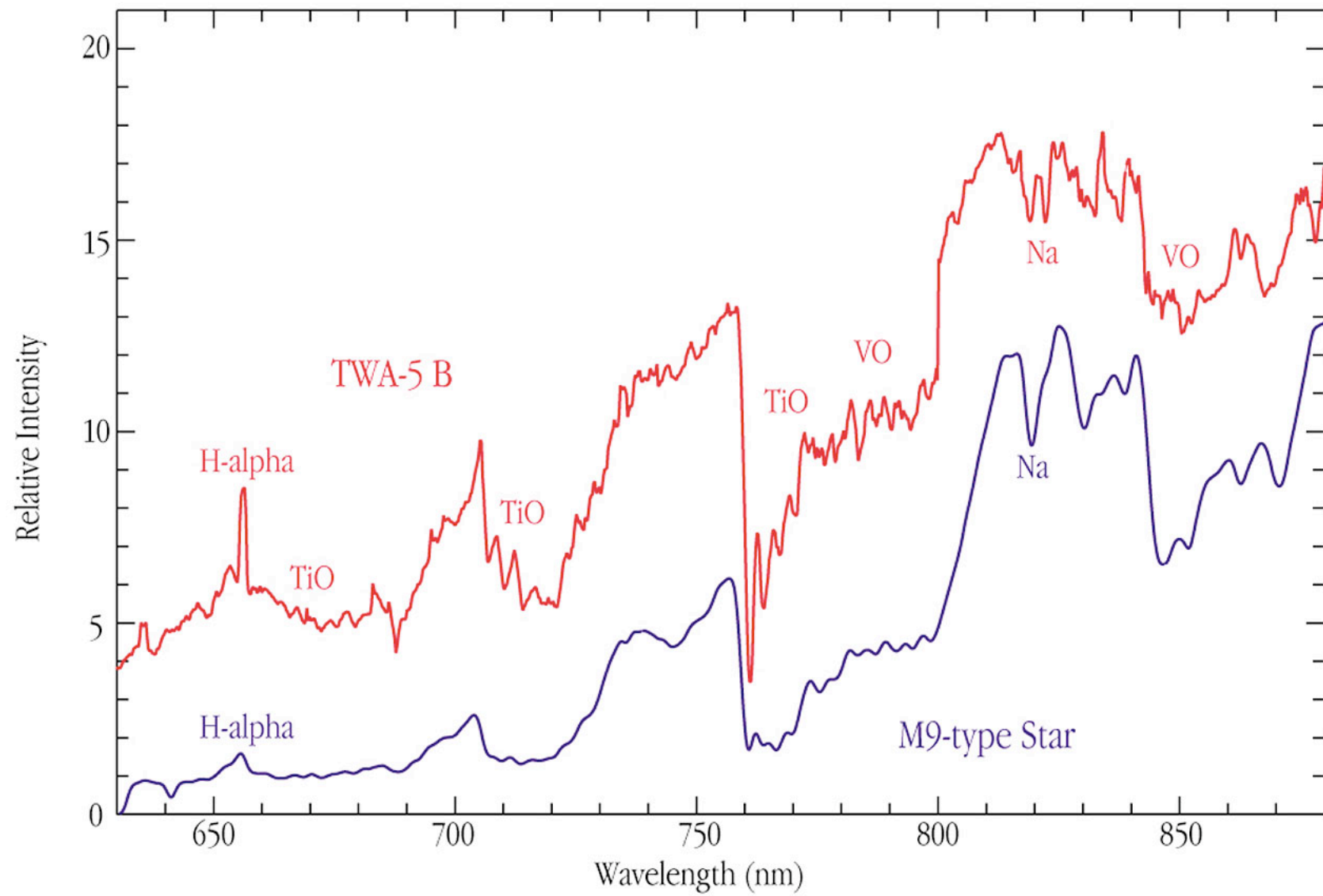
B, V, I



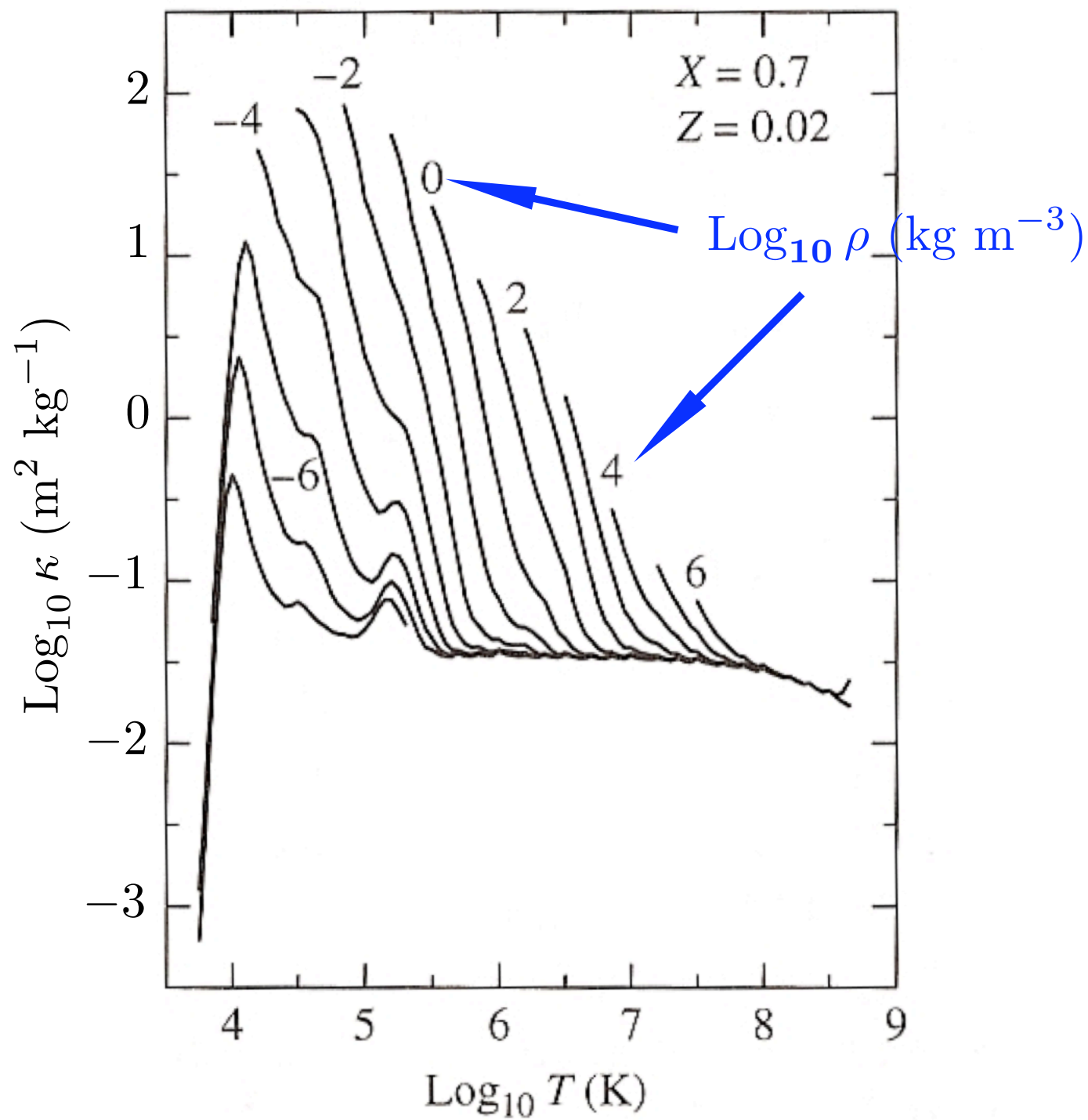
B, I, K

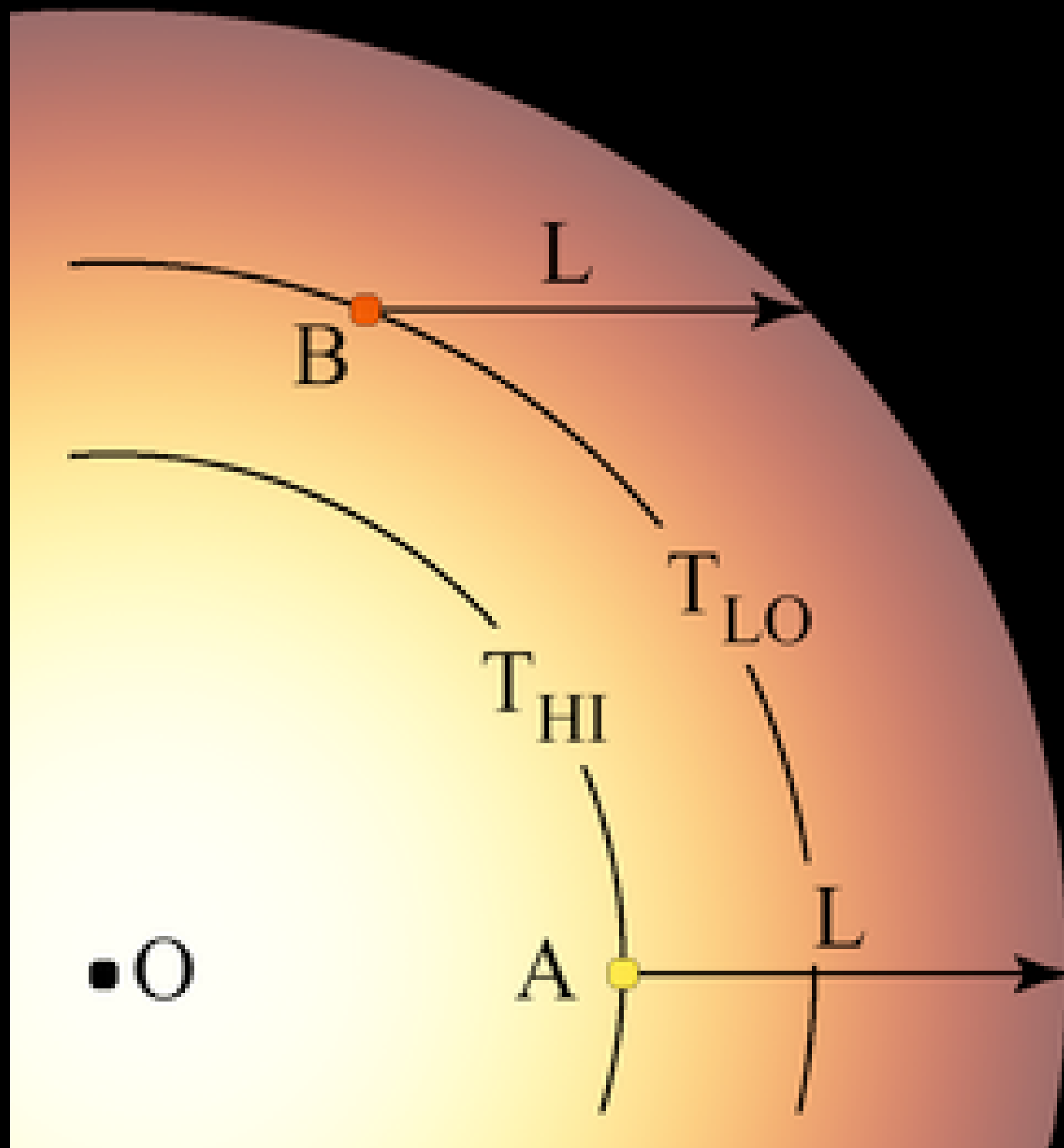


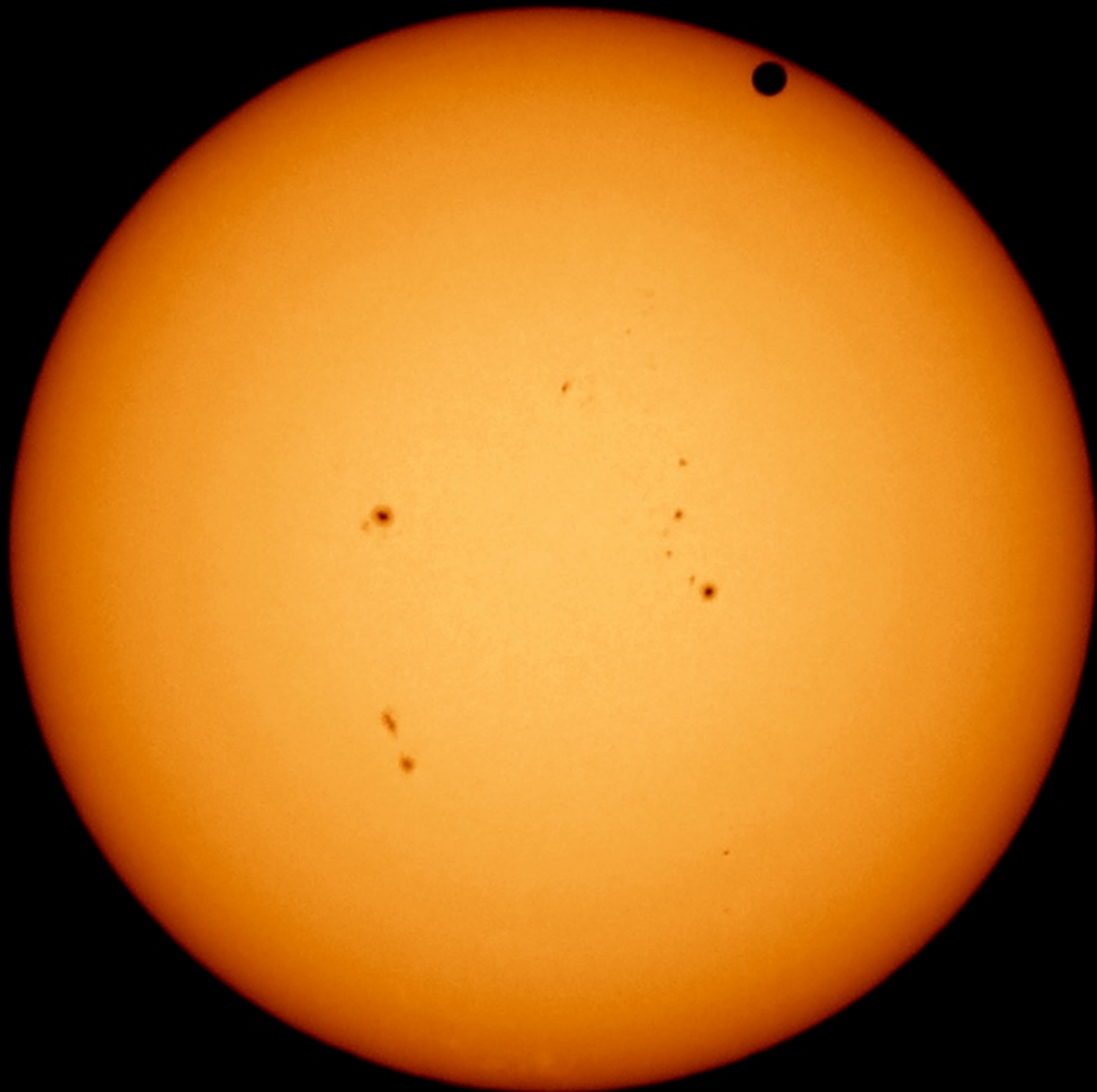


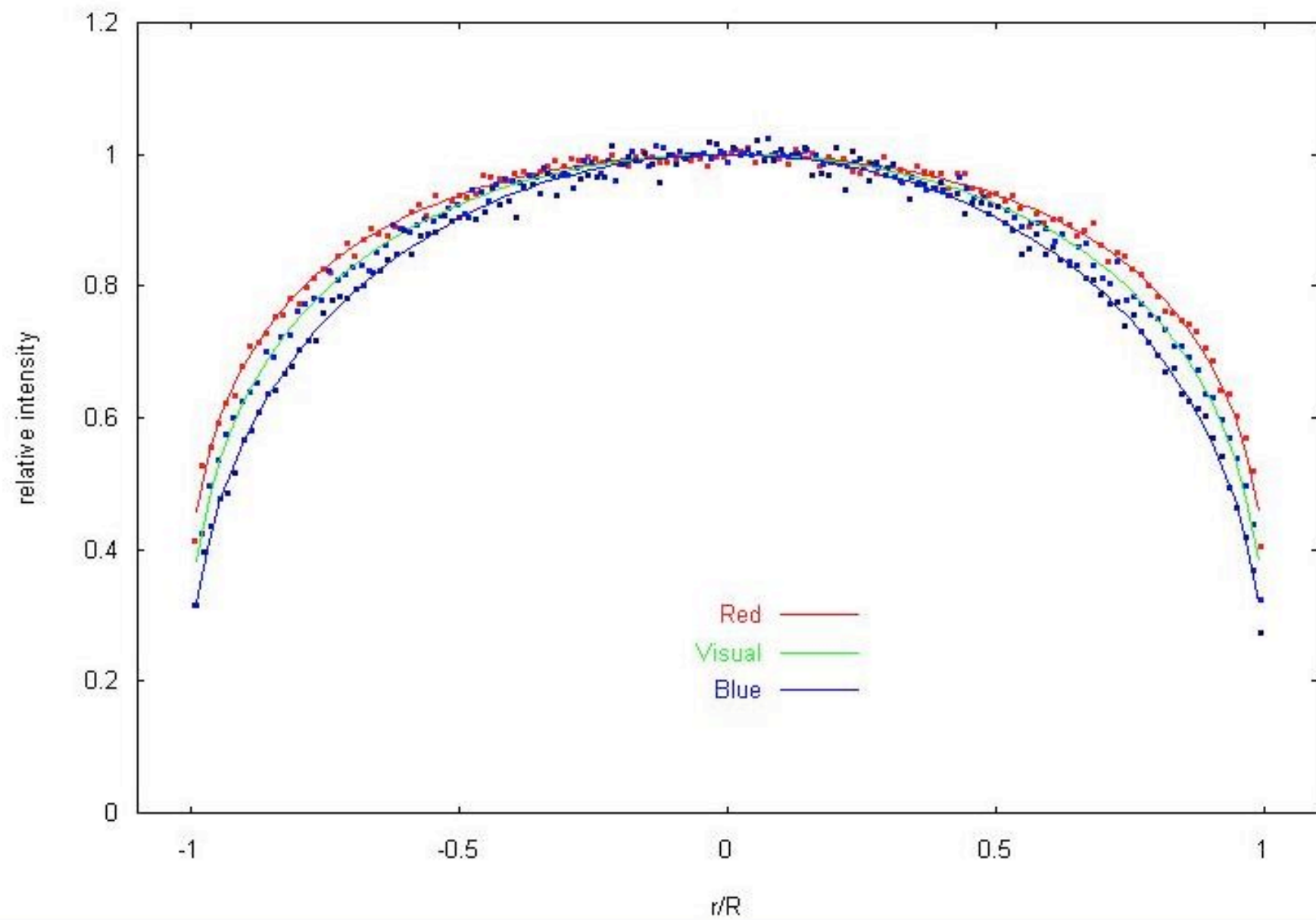






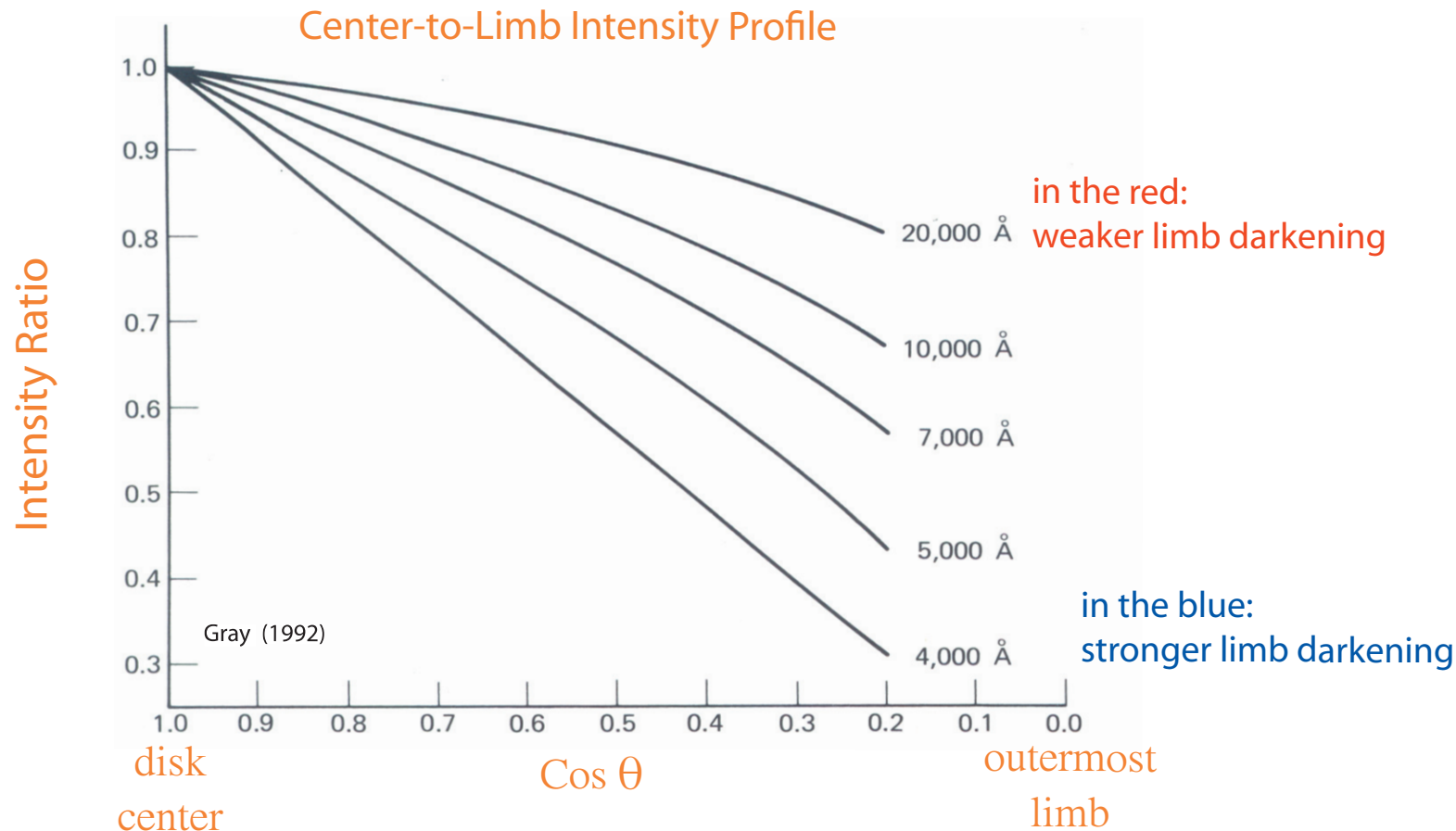






Limb Darkening Basics II

Continuum wavelength dependence



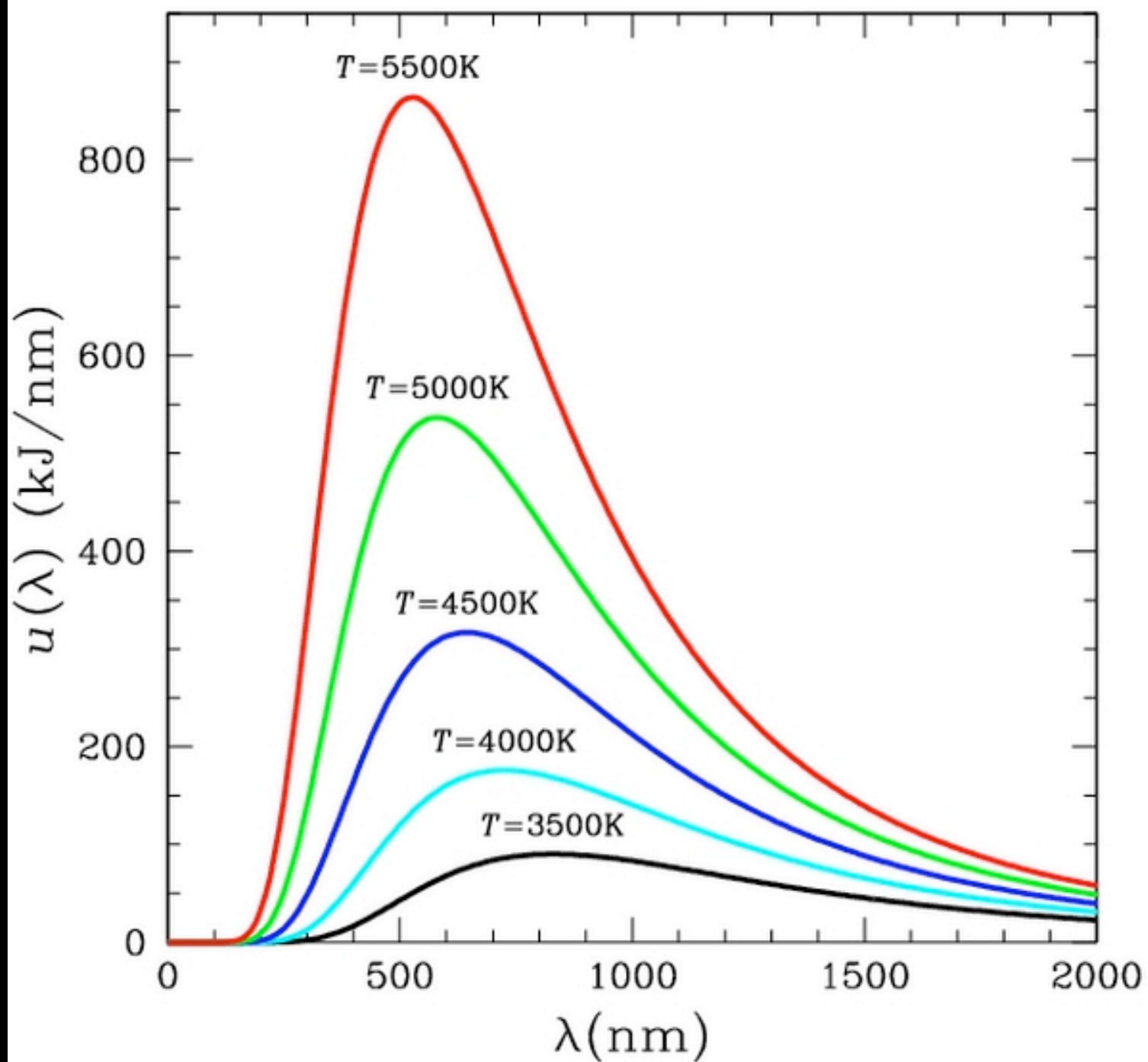
Rayleigh-Jeans approx.
of the Planck function

$$B_{\lambda} \approx \frac{2ckT}{\lambda^4} \quad \text{when } hc \ll k\lambda T$$

$$\frac{dB_{\lambda}}{dT} \approx \frac{2ck}{\lambda^4}$$

The change in intensity with temperature increases with decreasing wavelength







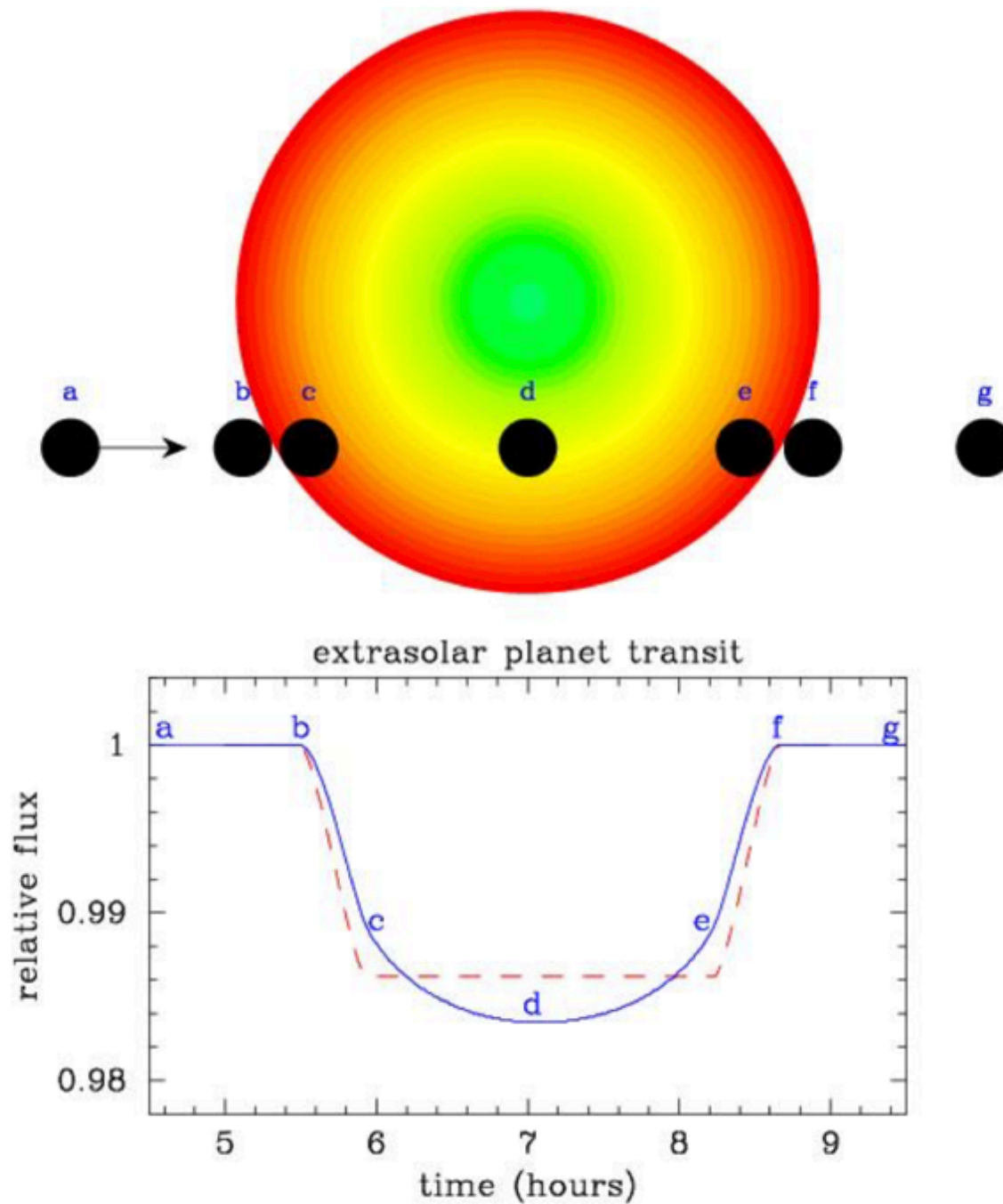


Fig. 1.3.— Illustration of a planetary transit and the resultant light curve for both a stellar disk of uniform brightness (dashed line) and one that includes limb-darkening (solid line).