

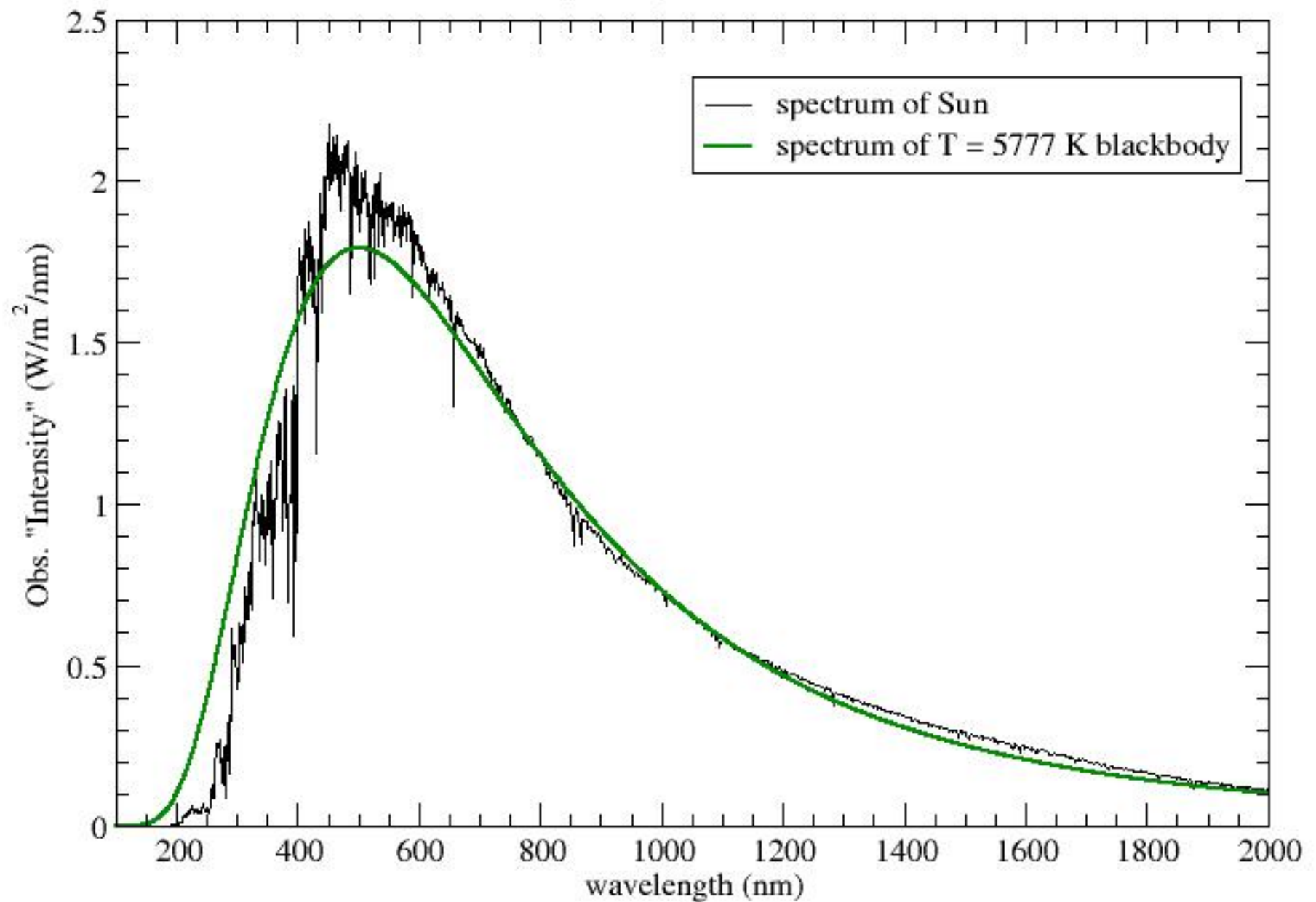


Structure and Evolution of Stars

Lecture 3

Sun's Spectrum vs. Thermal Radiator

of a single temperature $T = 5777$ K



Light from star through telescope

Small slit in telescope's focal plane

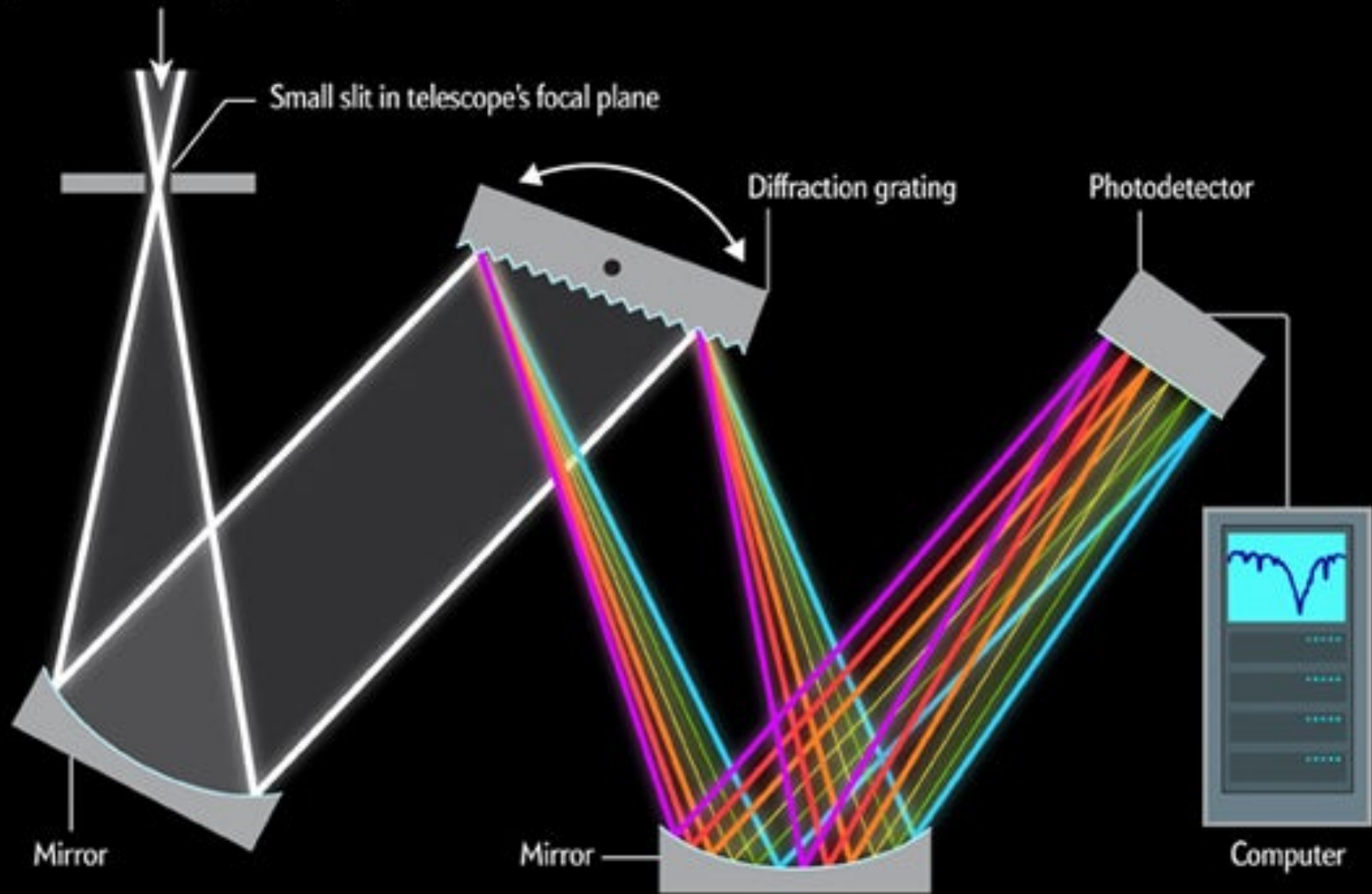
Diffraction grating

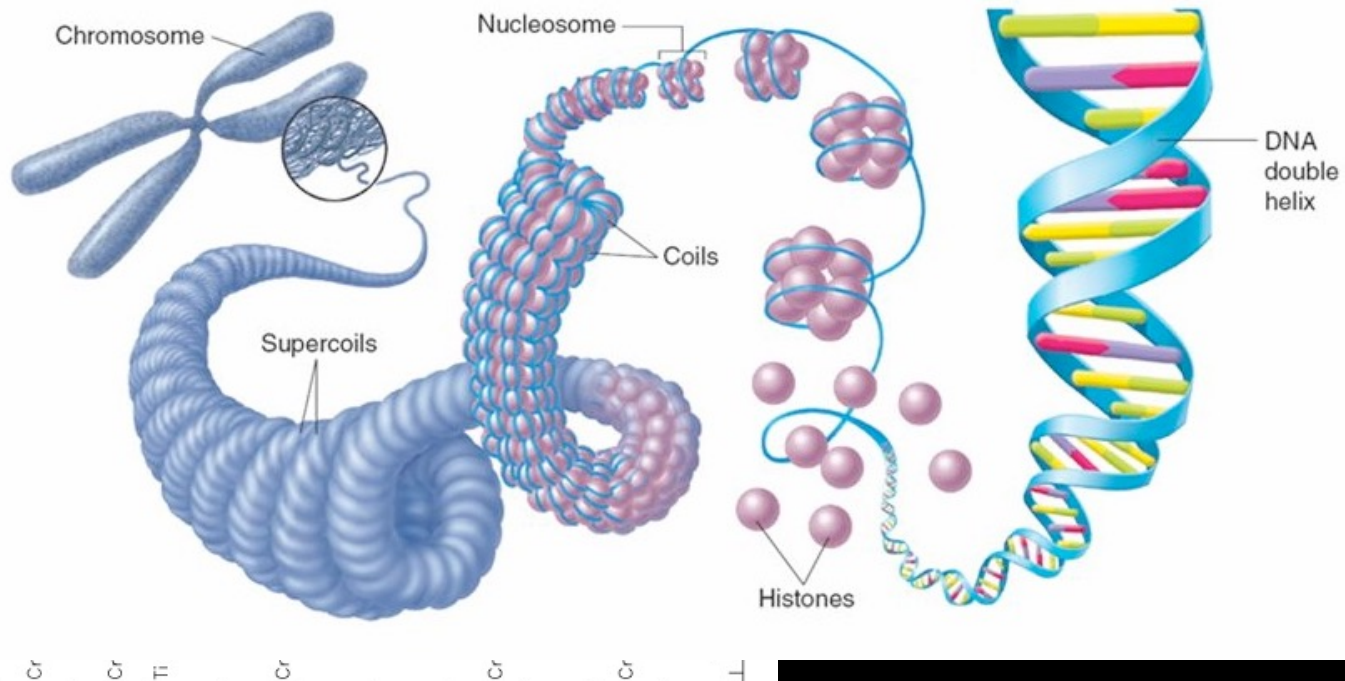
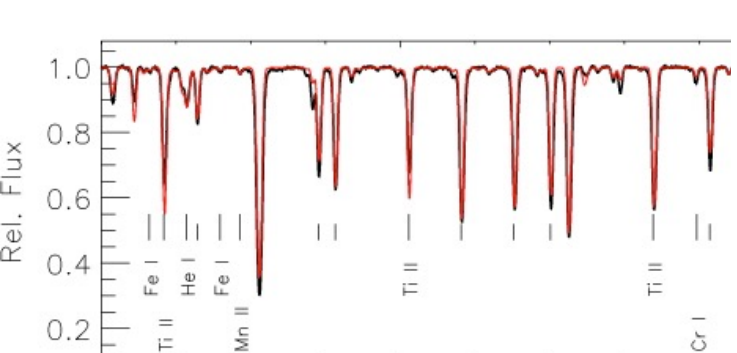
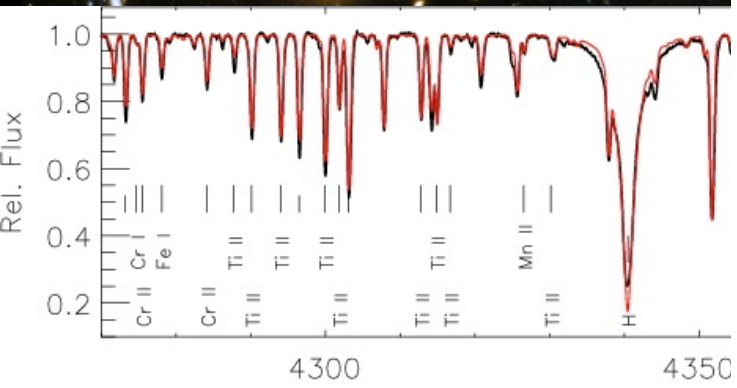
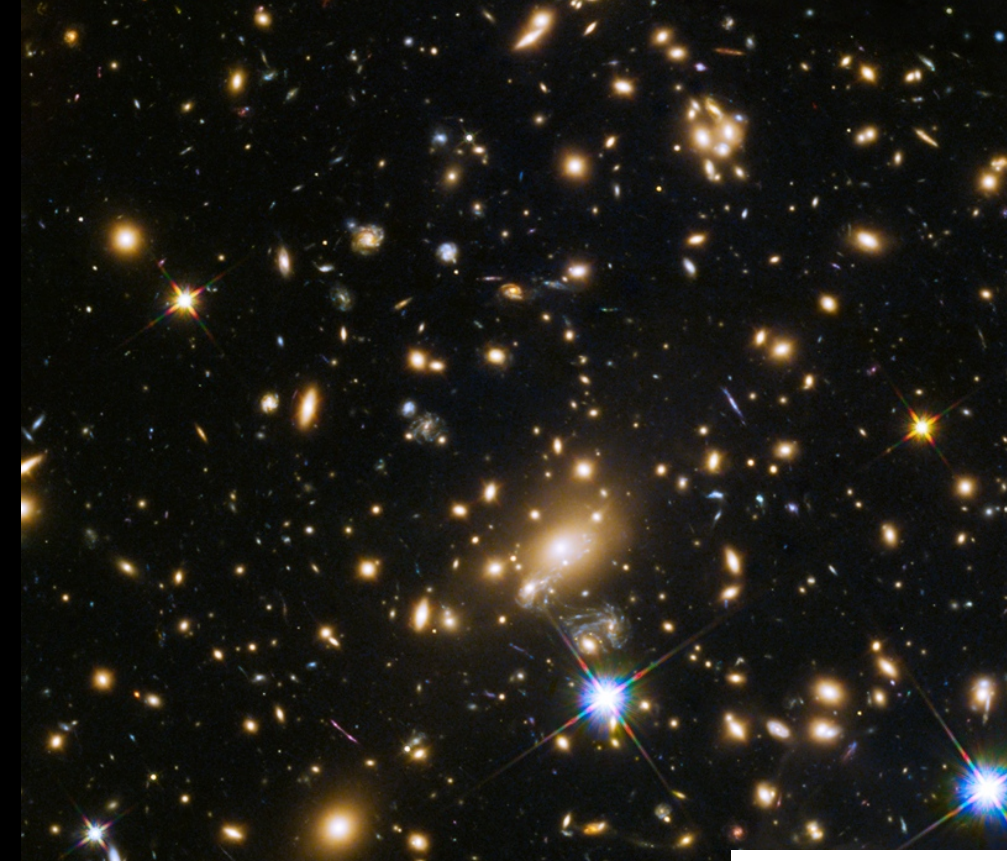
Photodetector

Mirror

Mirror

Computer

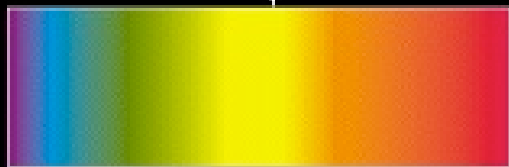




Hot blackbody



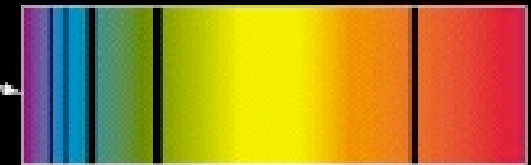
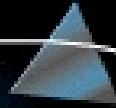
Prism



a Continuous spectrum

Cloud of cooler gas

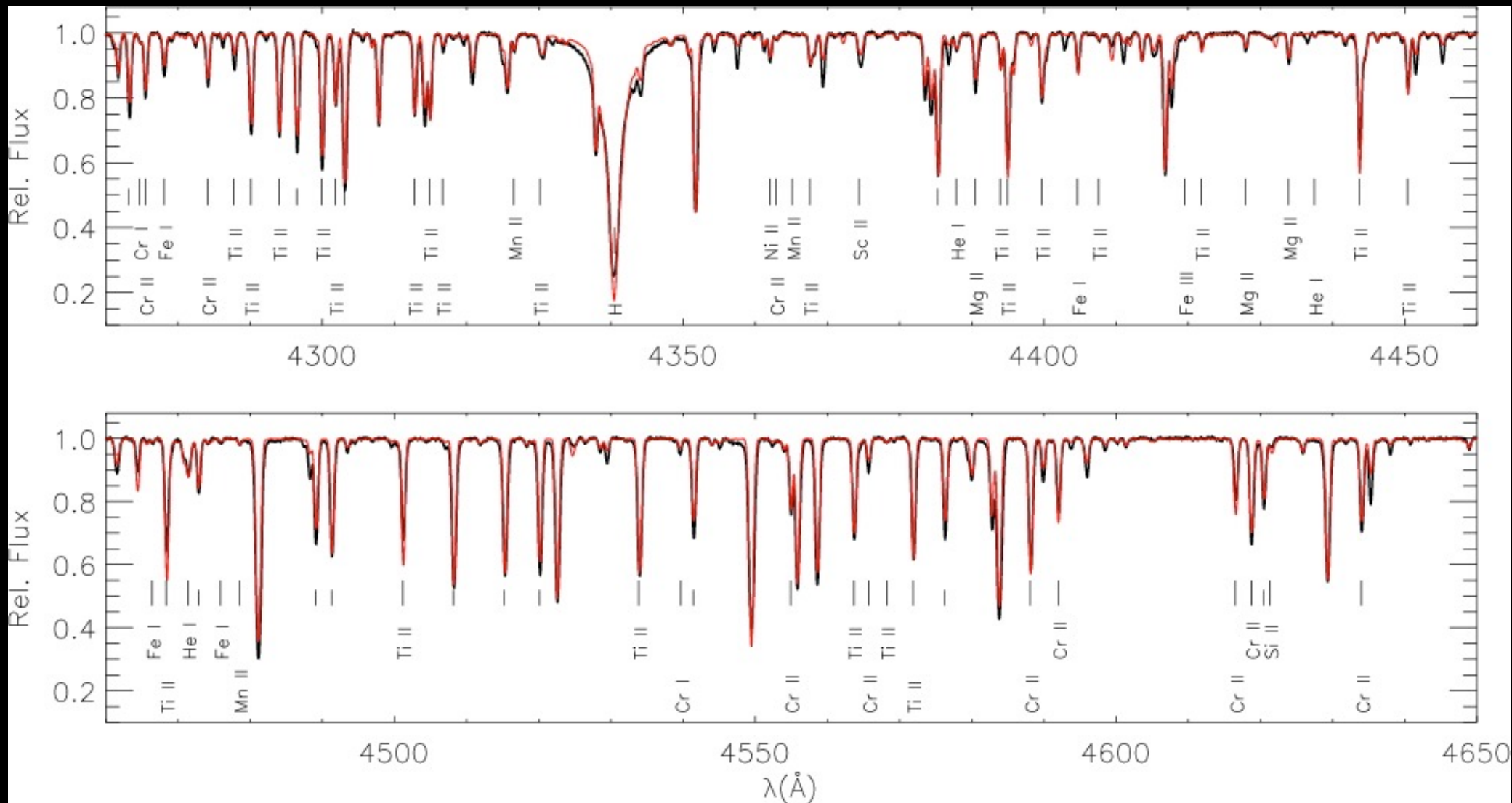
Prism



b Absorption line spectrum



c Emission line spectrum

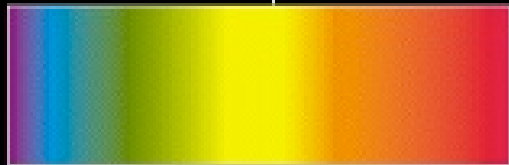


High resolution spectrum of Vega

Hot blackbody



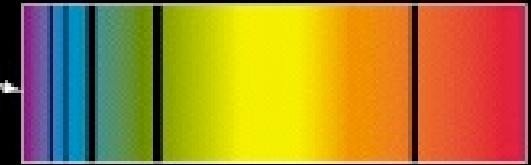
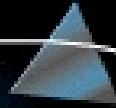
Prism



a Continuous spectrum

Cloud of cooler gas

Prism



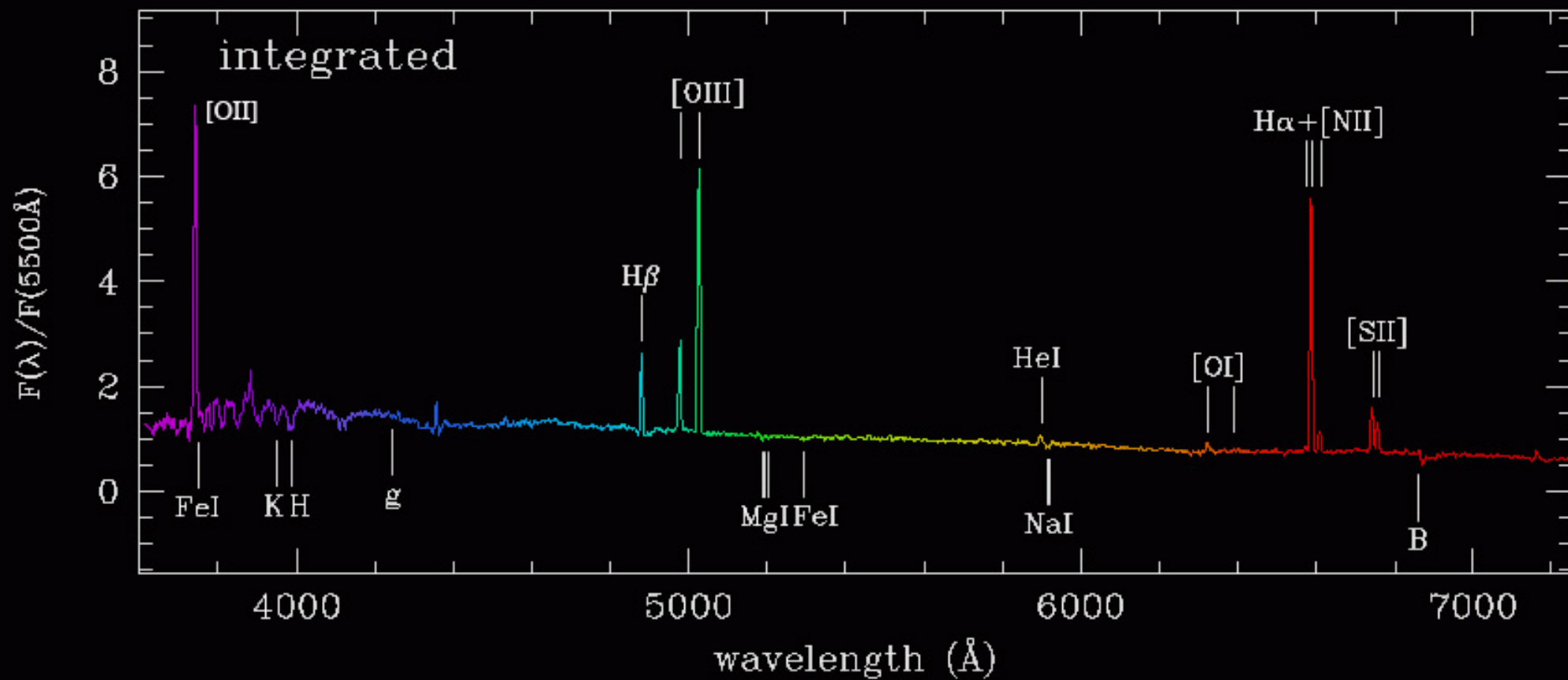
b Absorption line spectrum

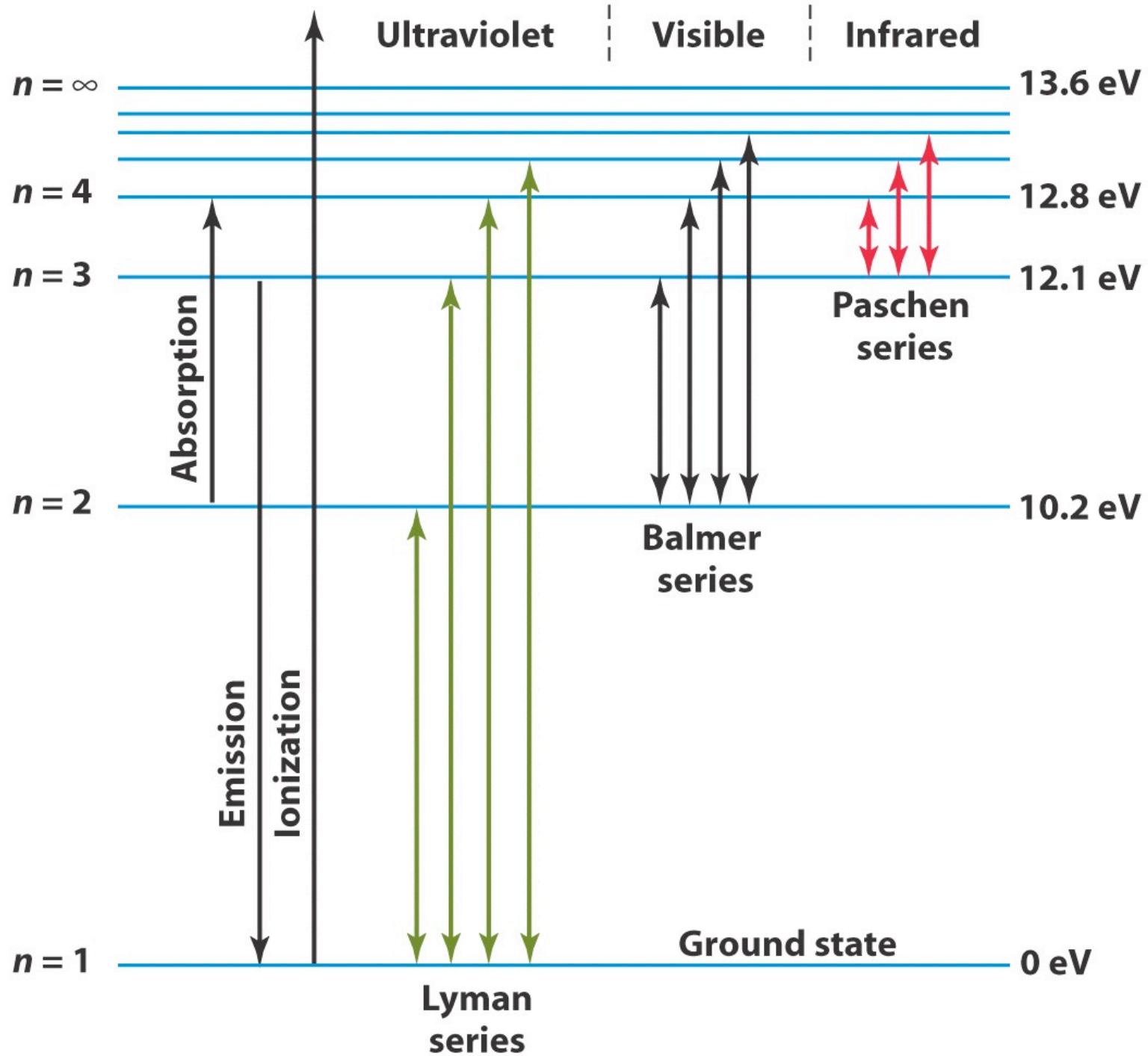


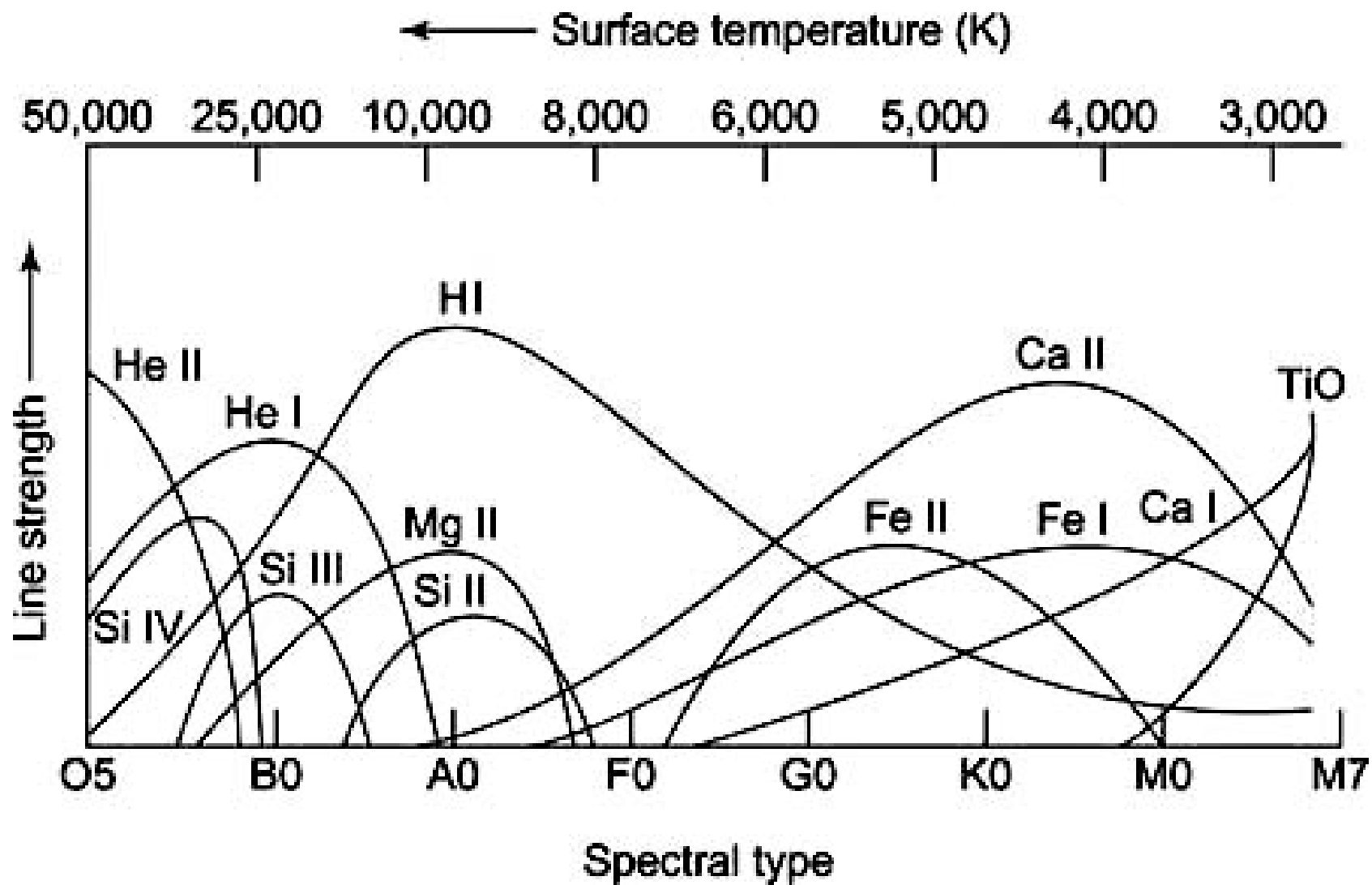
c Emission line spectrum

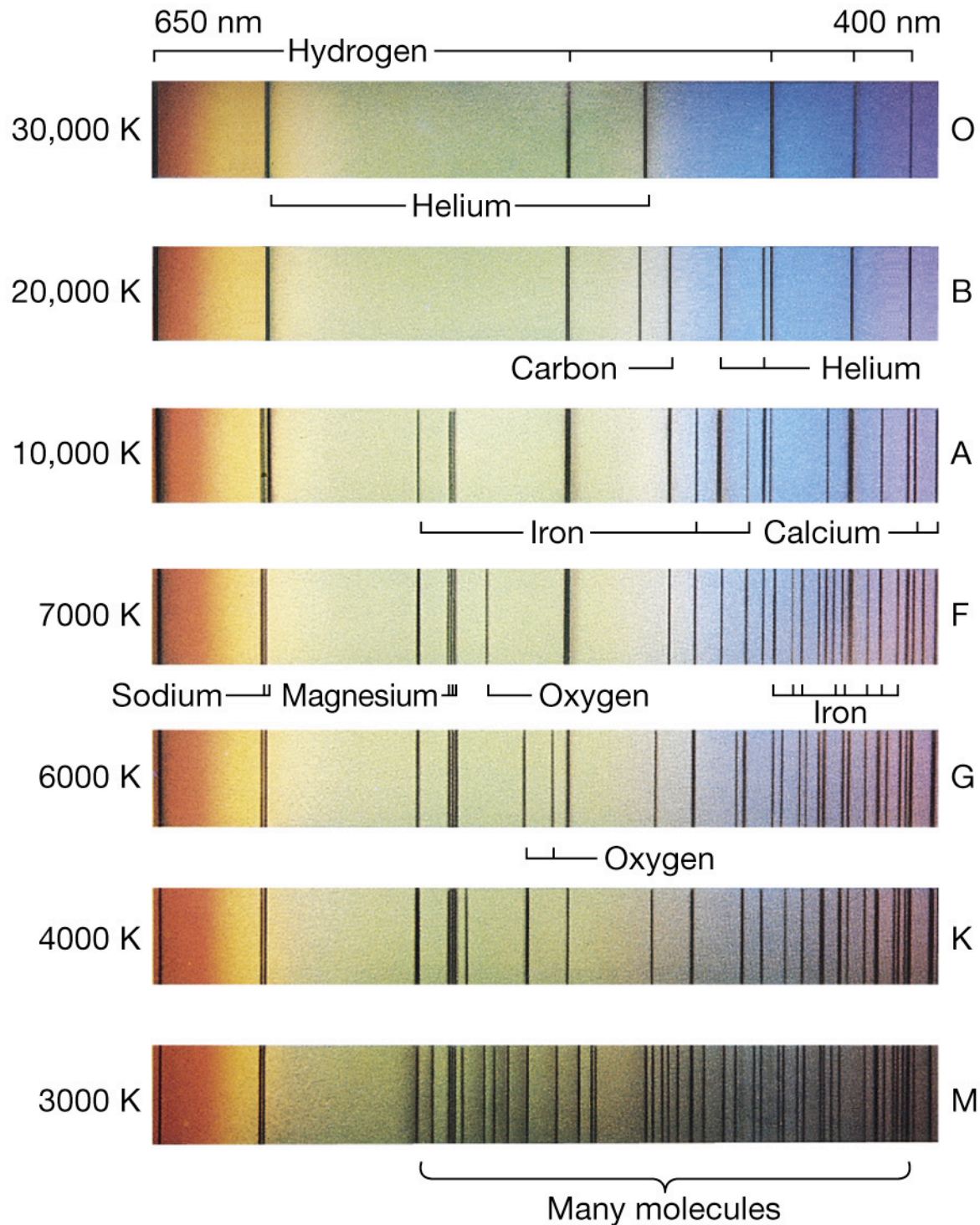


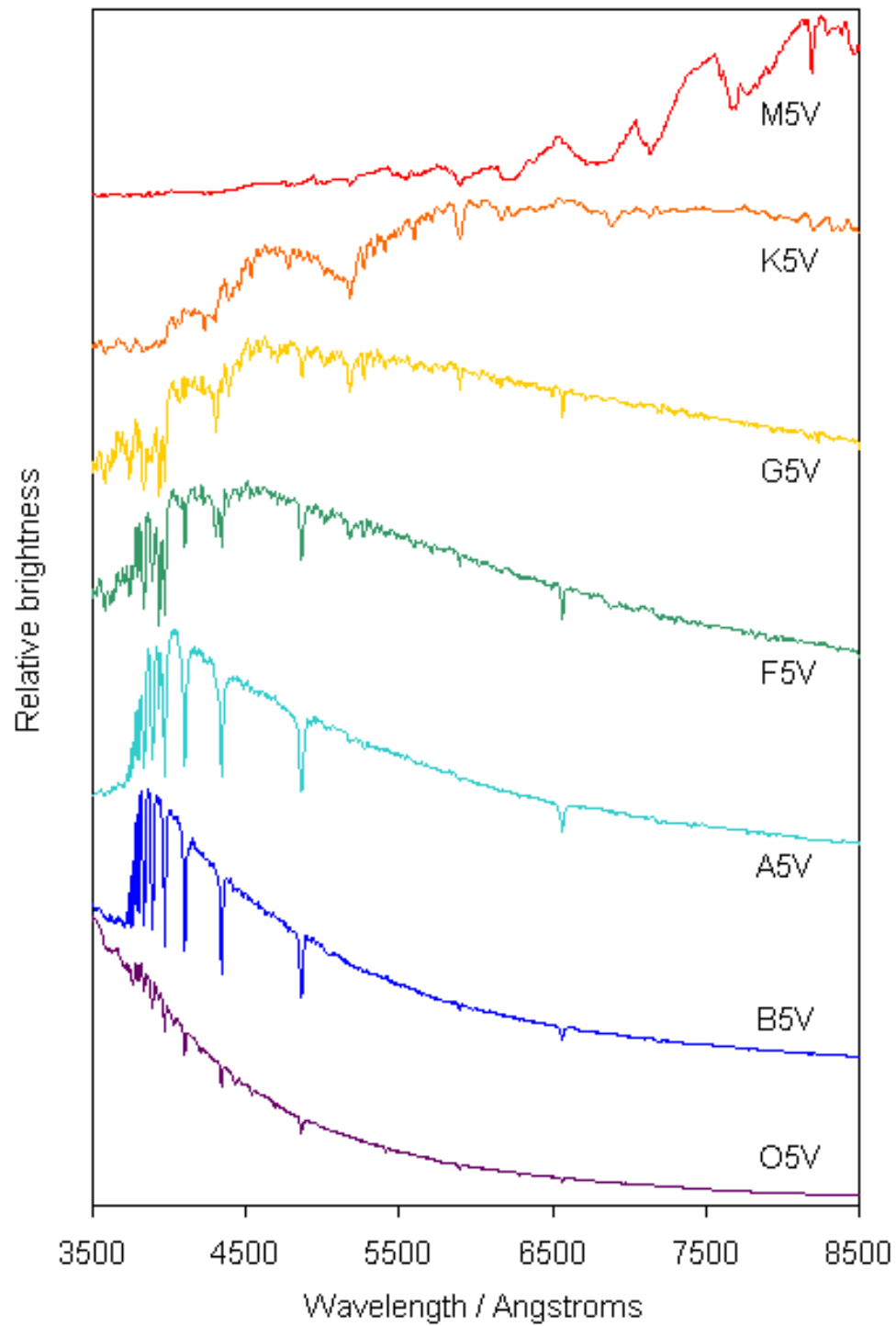








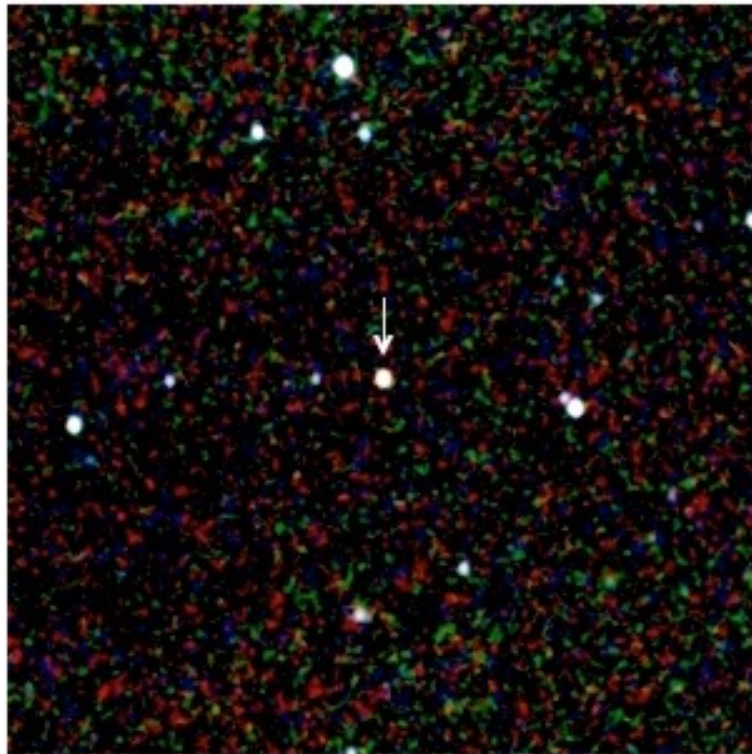




2MASS J1146+2230

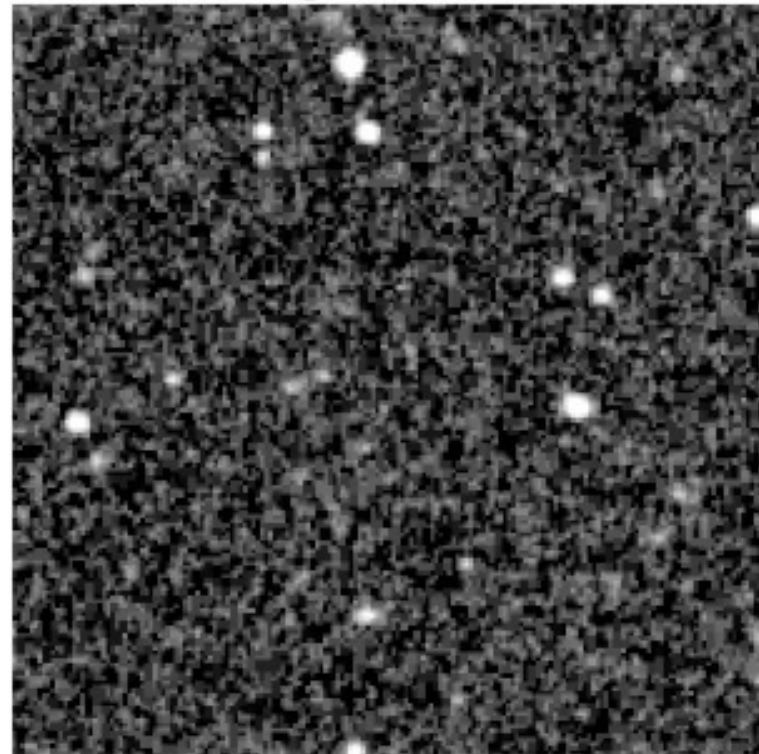
An L-type dwarf in the constellation Leo

The near-infrared view



2MASS Atlas JHK_s Composite Image

The optical view

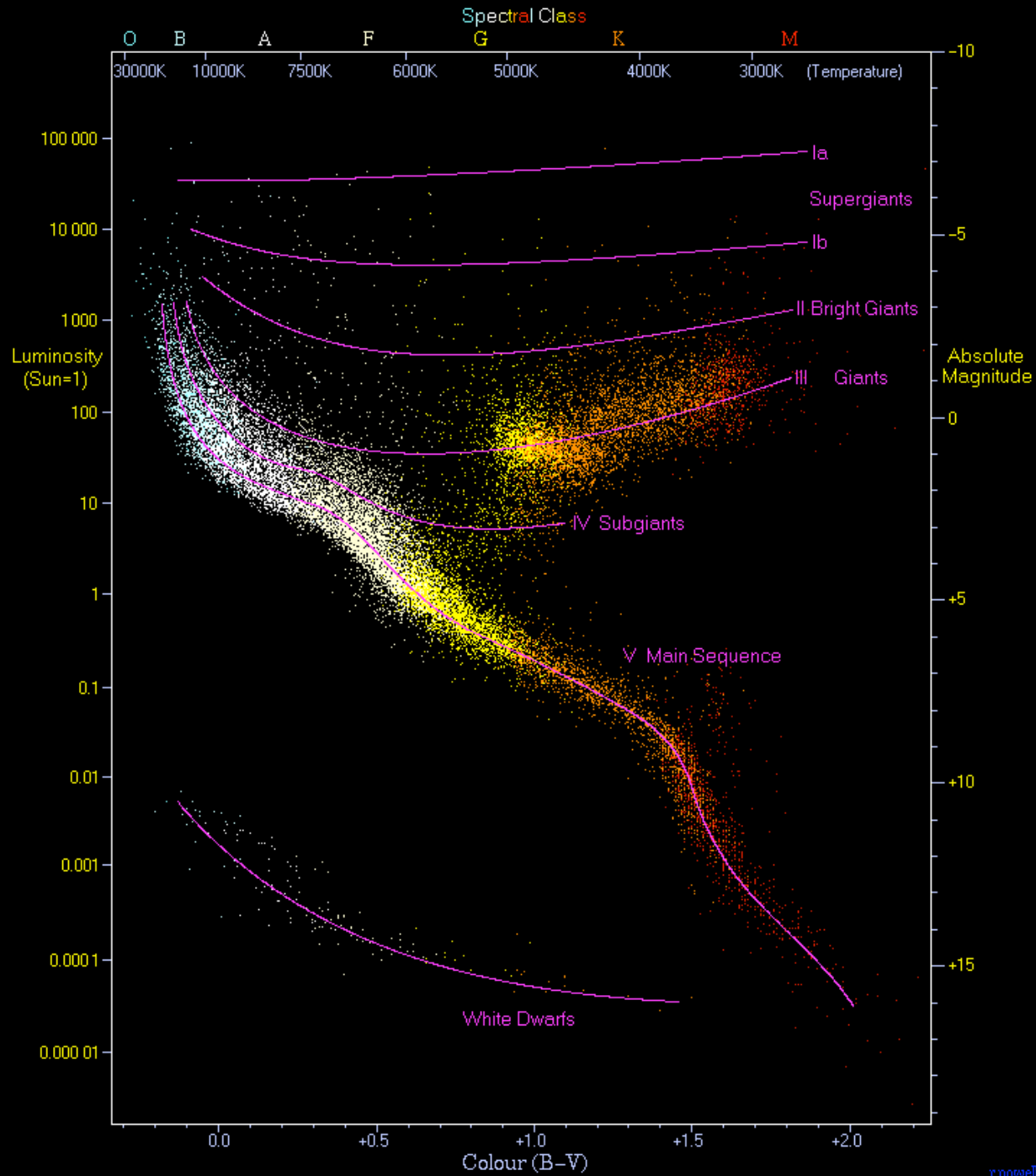


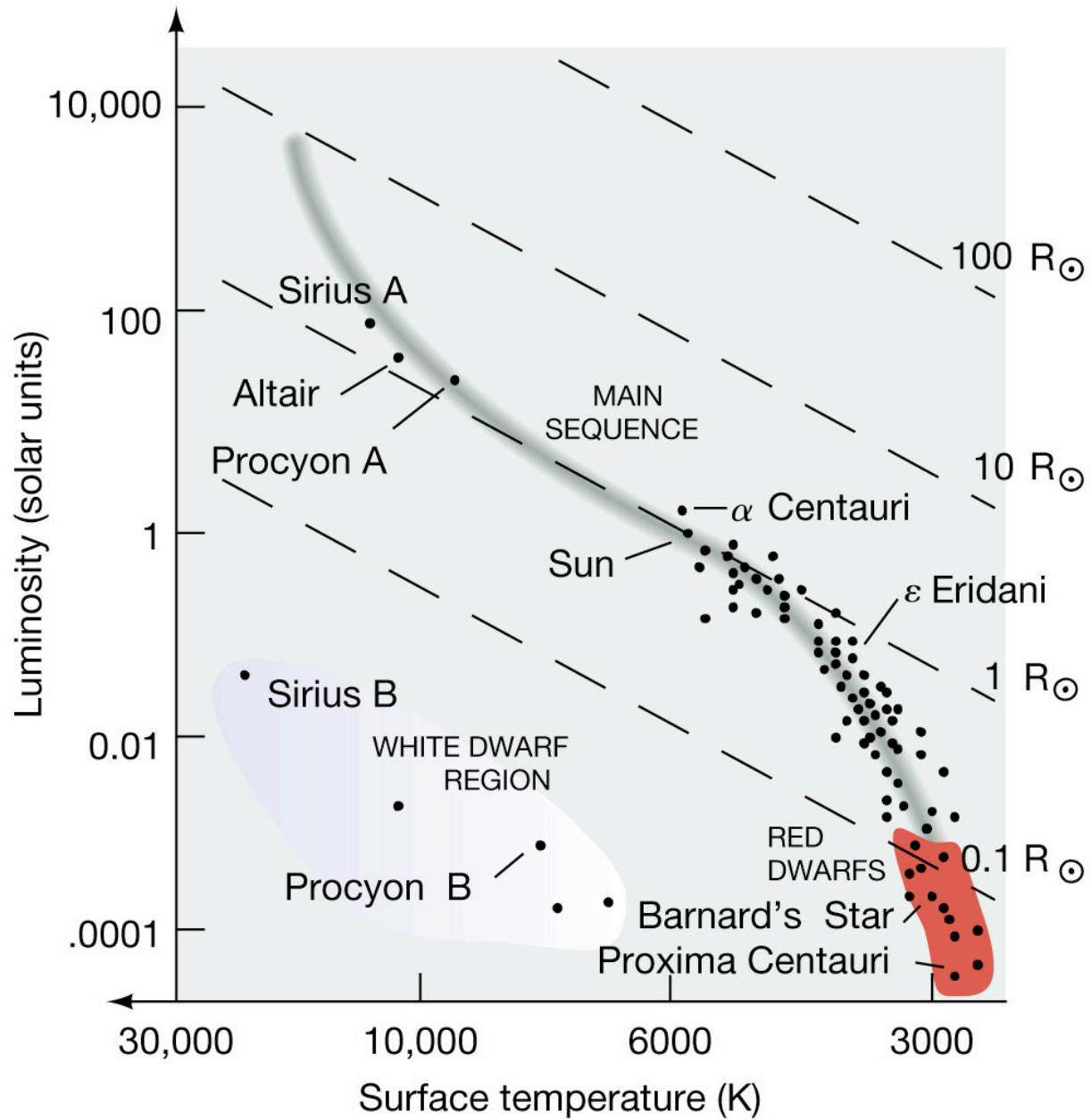
Palomar Digitized Sky Survey



J.D. Kirkpatrick (IPAC/Caltech), I.N. Reid (Caltech), R.M. Cutri (IPAC/Caltech),
C.A. Beichman (IPAC/JPL/Caltech), J. Liebert (U of A), M.F. Skrutskie (UMass)

The 2MASS project is a collaboration between the University of Massachusetts and IPAC





Spectral classification



