



Figure 6.4. Photographs of the spectra of two stars. The upper spectrum is of a sunlike star (in the constellation Cygnus) with a surface temperature of about 5800 K; notice that the hydrogen absorption lines are clearly visible among a number of lines from other elements. The lower spectrum is of a hotter star (in Ursa Major, the Big Dipper), with a surface temperature of 9500 K. At this temperature a much larger fraction of the hydrogen atoms are in their first excited states, so the hydrogen lines are much more prominent than any others. Reproduced with permission from Helmut A. Abt et al., *An Atlas of Low-Dispersion Grating Stellar Spectra* (Kitt Peak National Observatory, Tucson, AZ, 1968). Copyright ©2000, Addison-Wesley.