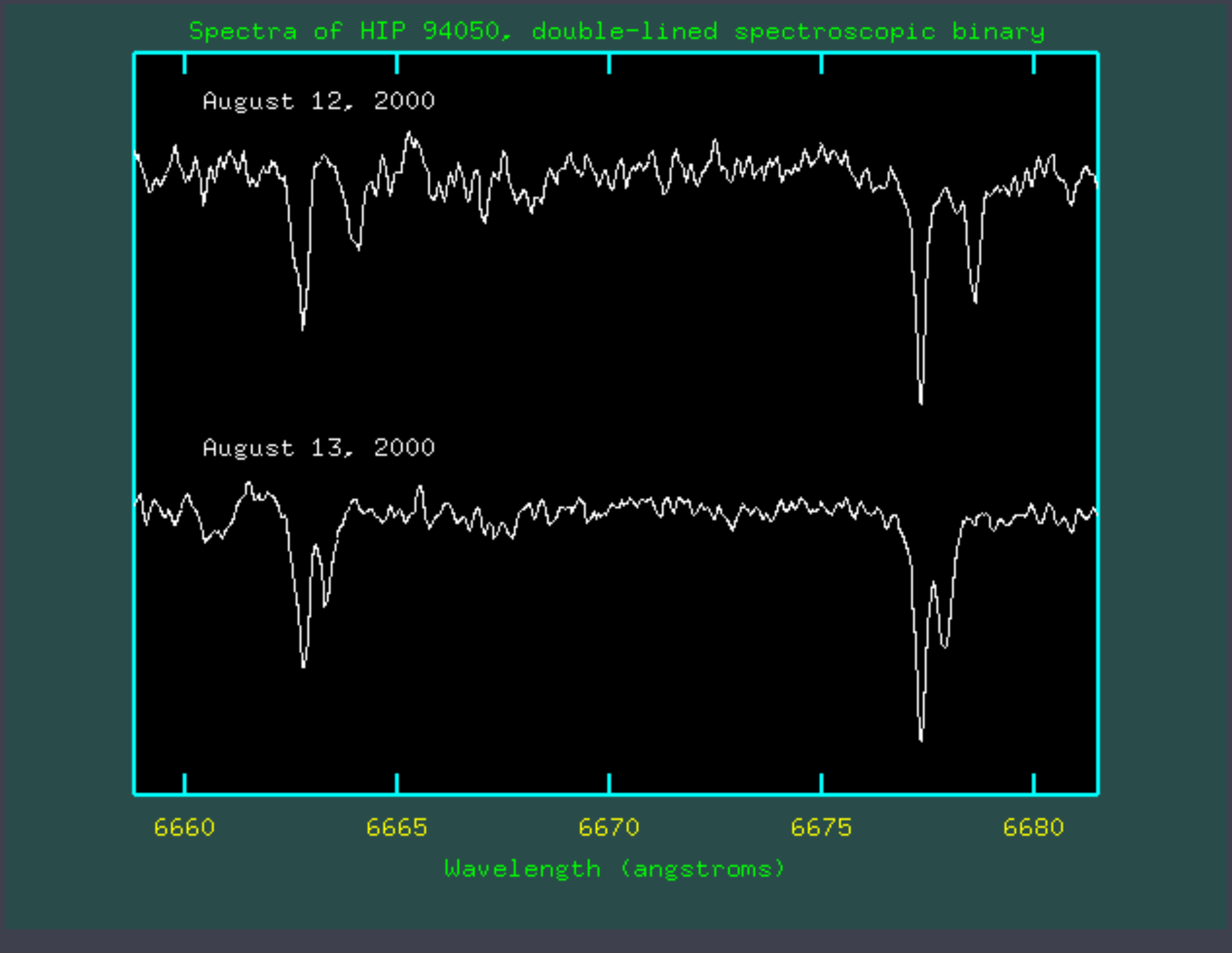
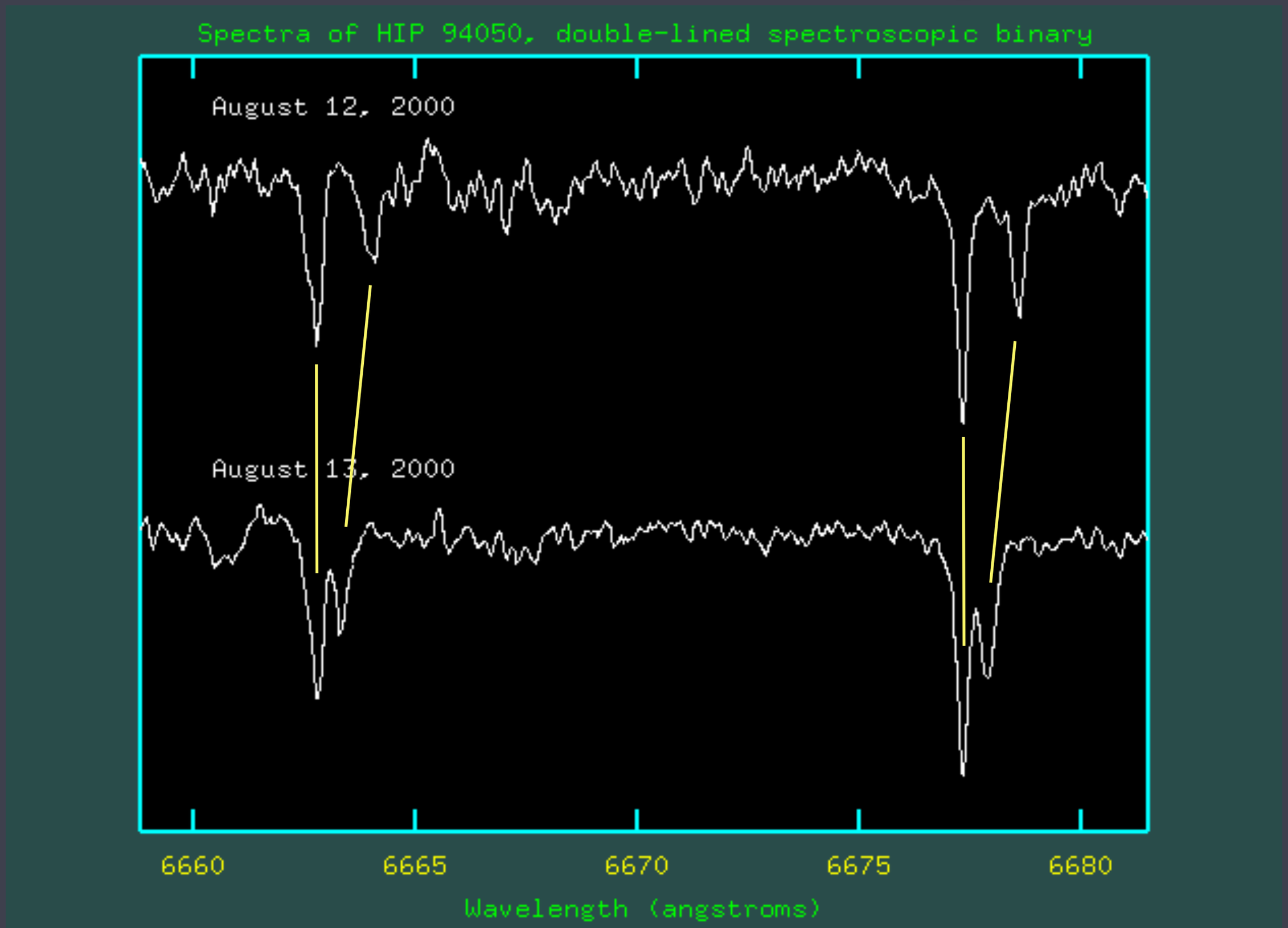
Exoplanets: radial velocities

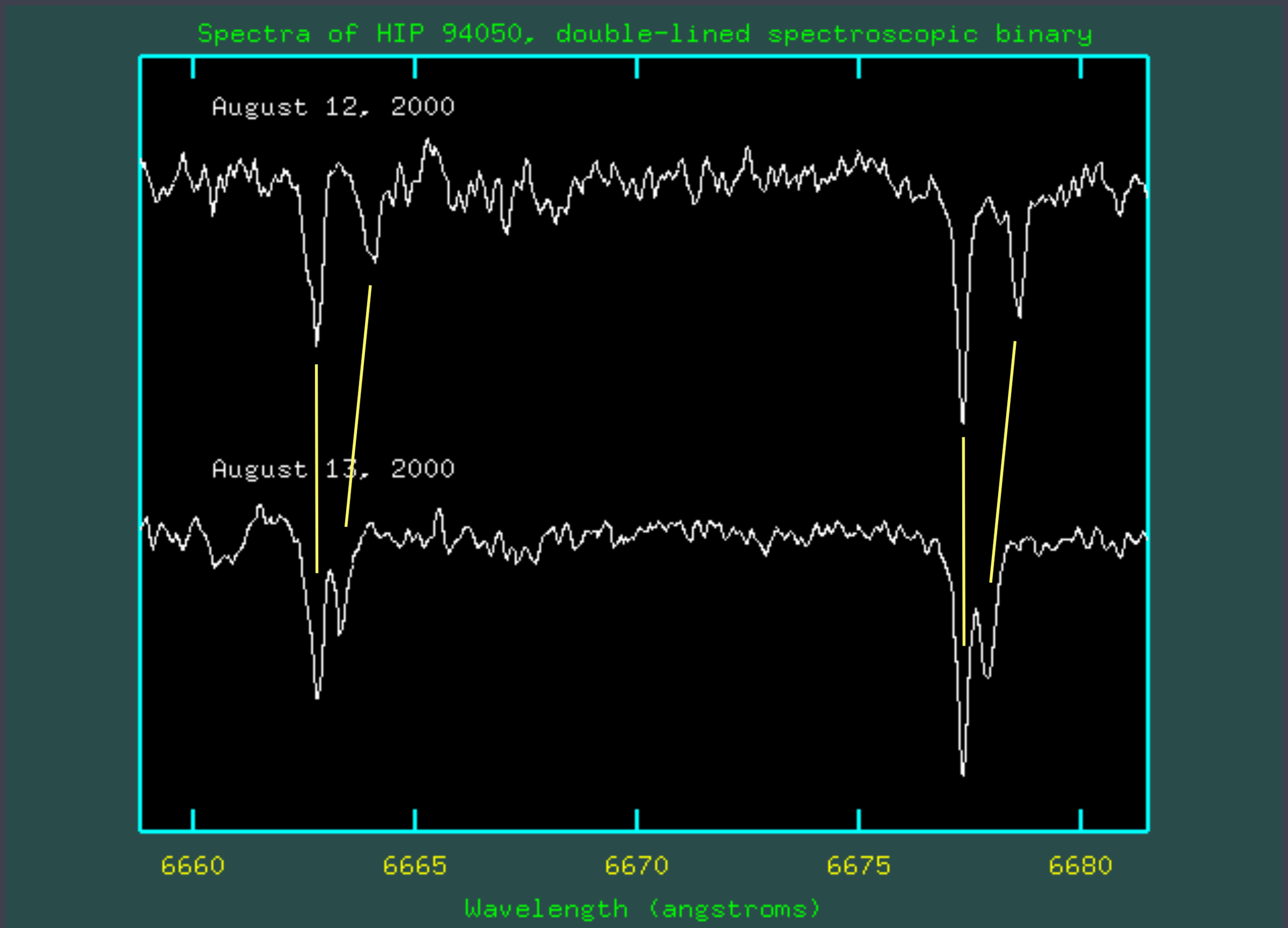
Spectrum of a binary star



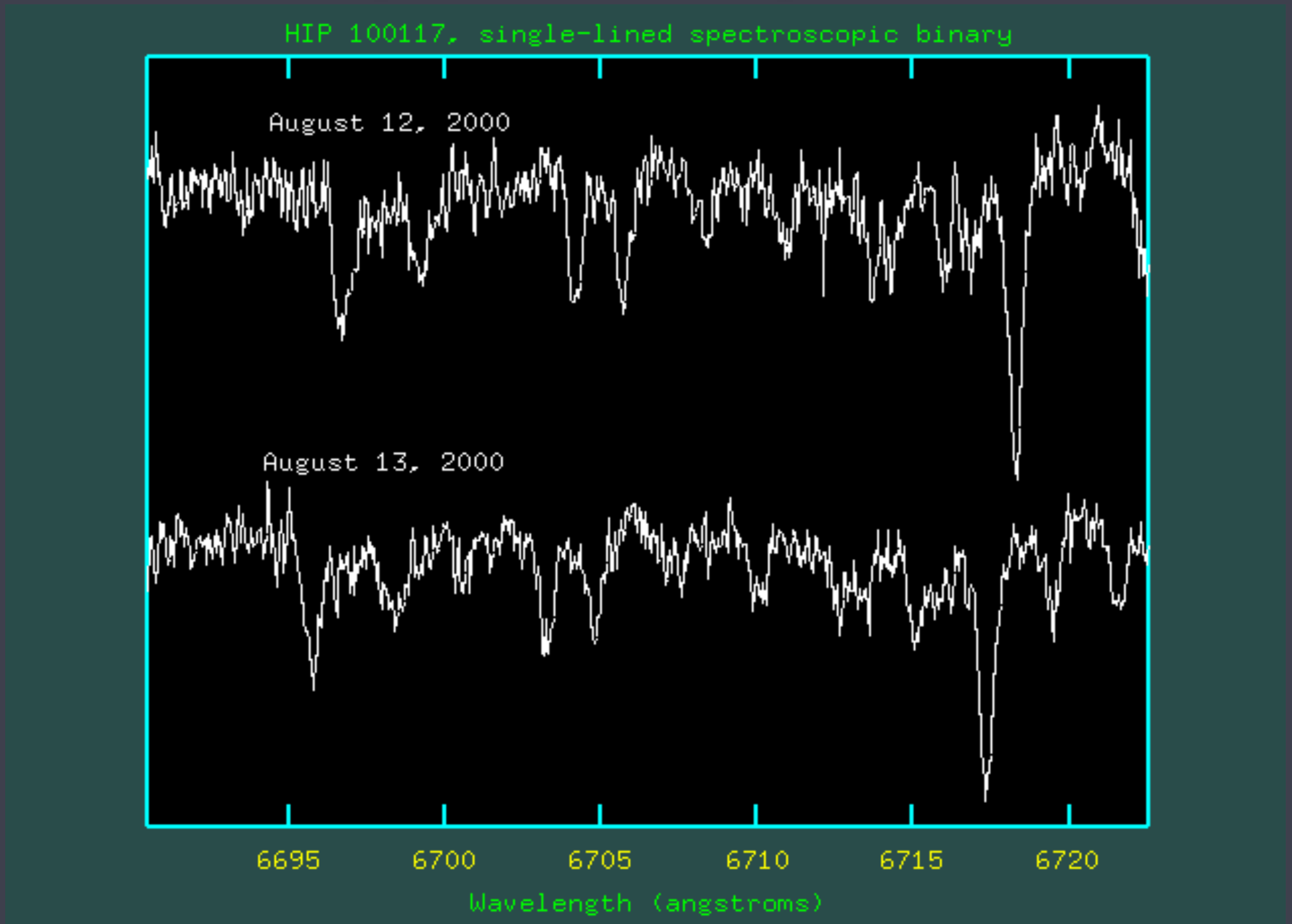
same star, two consecutive nights



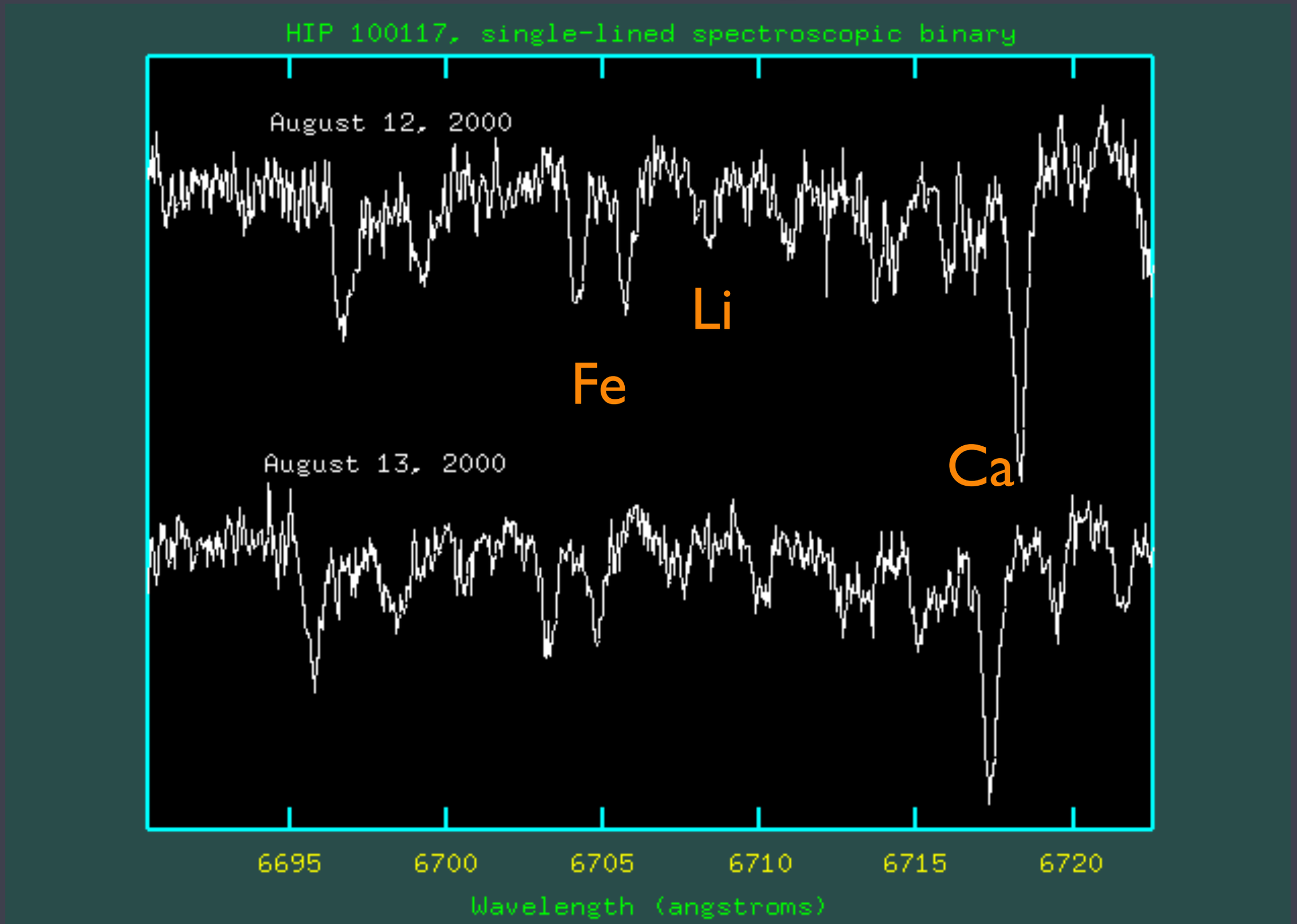
which star is the more massive one?



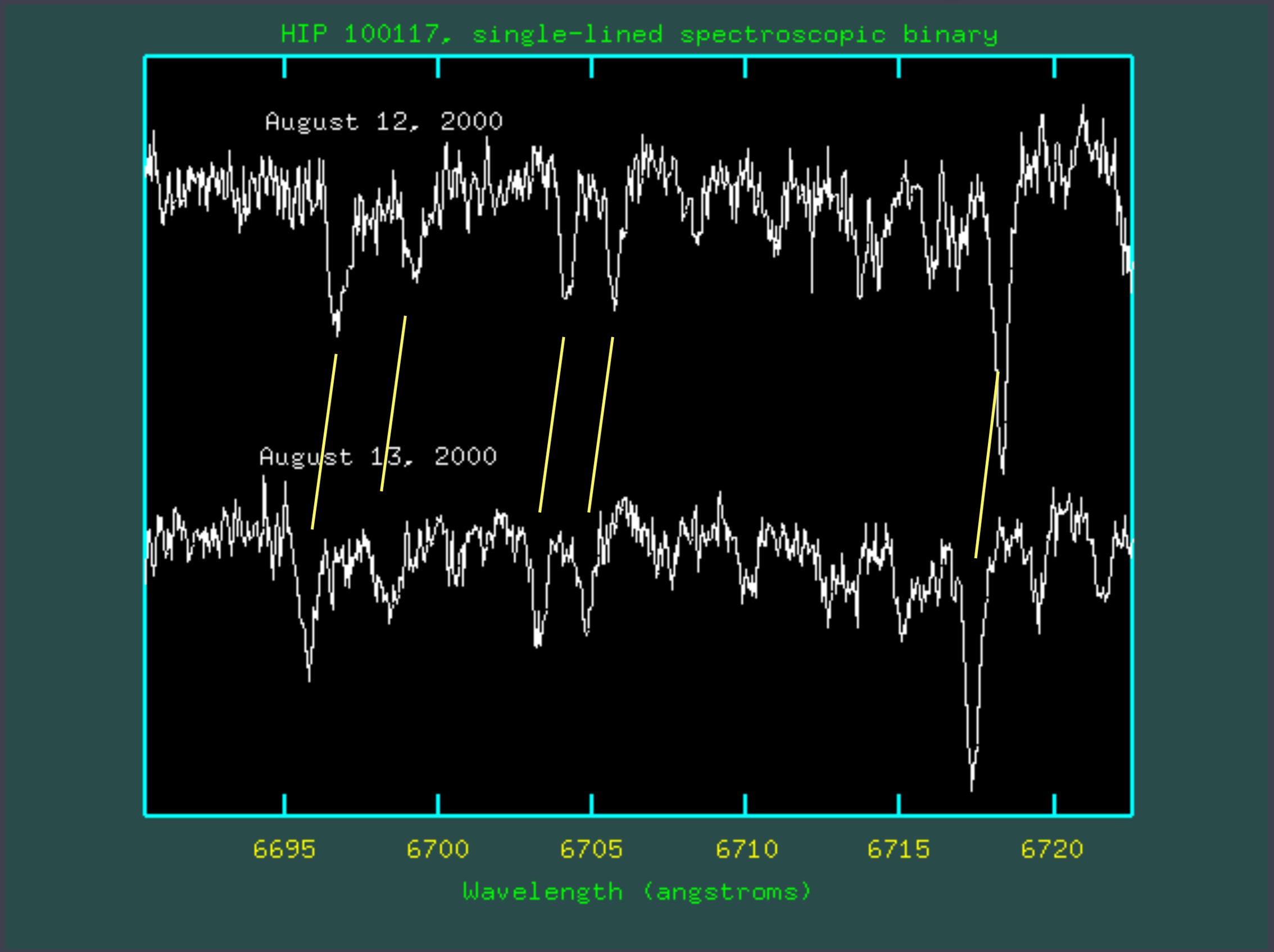
Spectrum of a single star



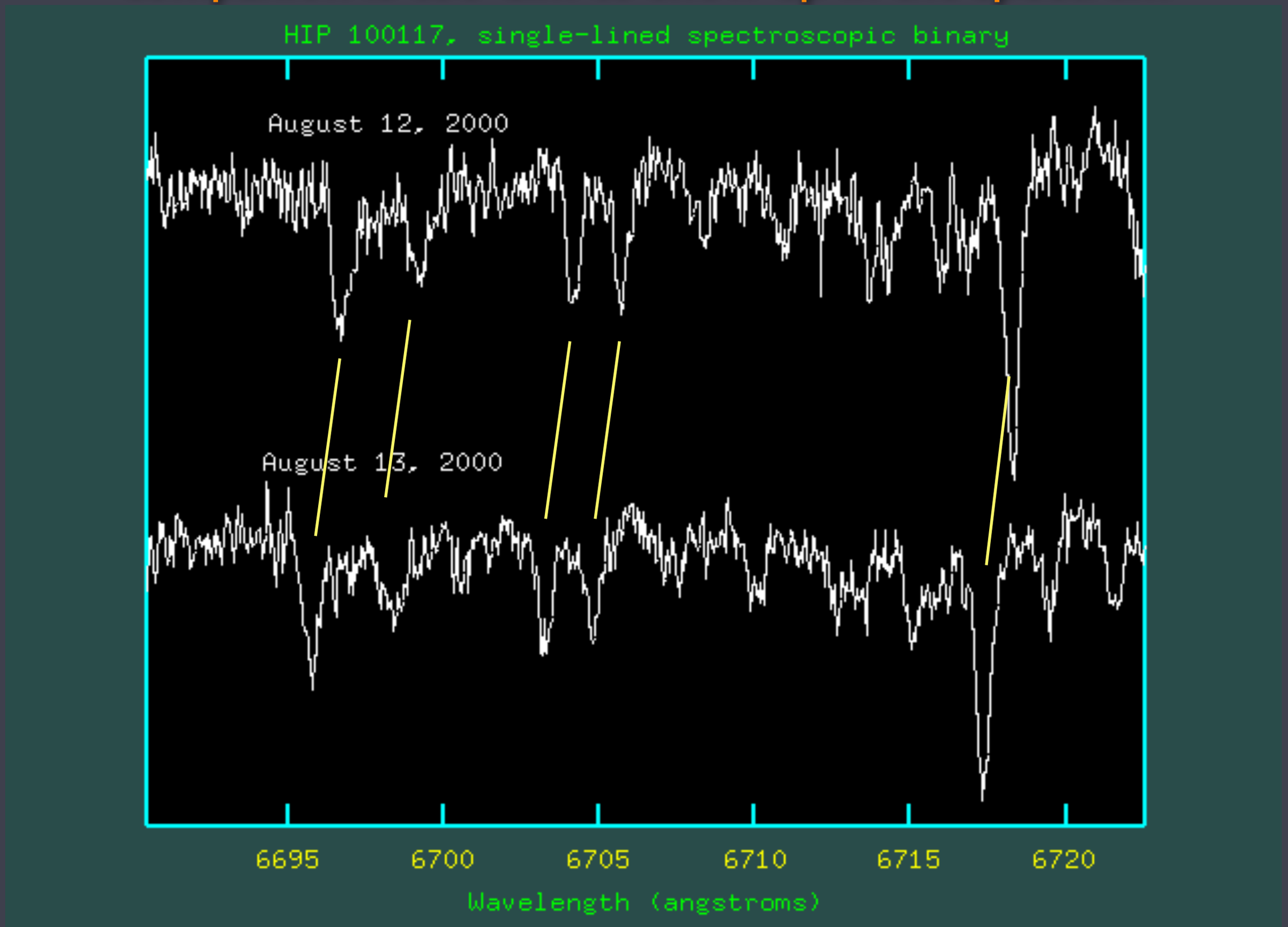
Spectrum of a single star



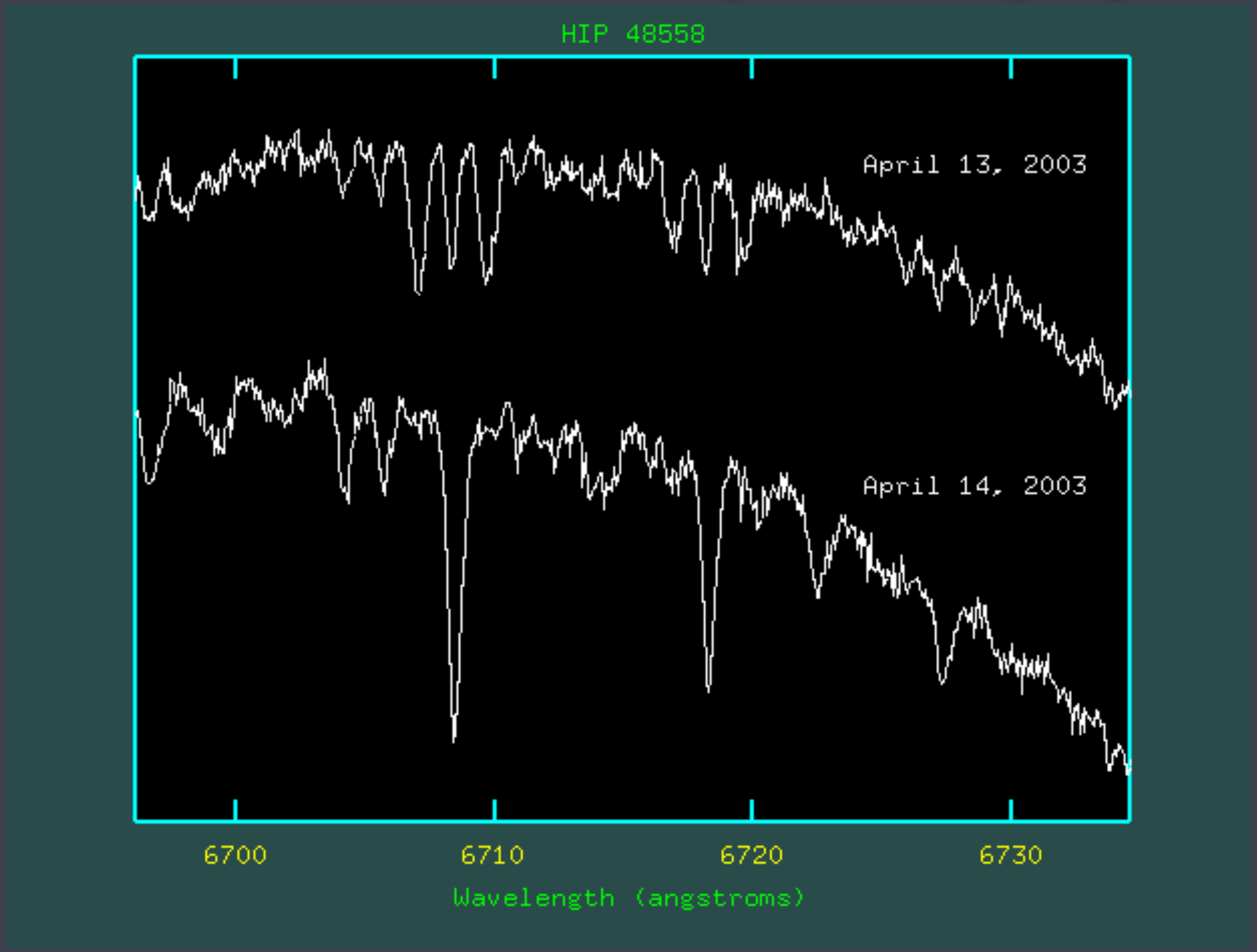
same star, two consecutive nights



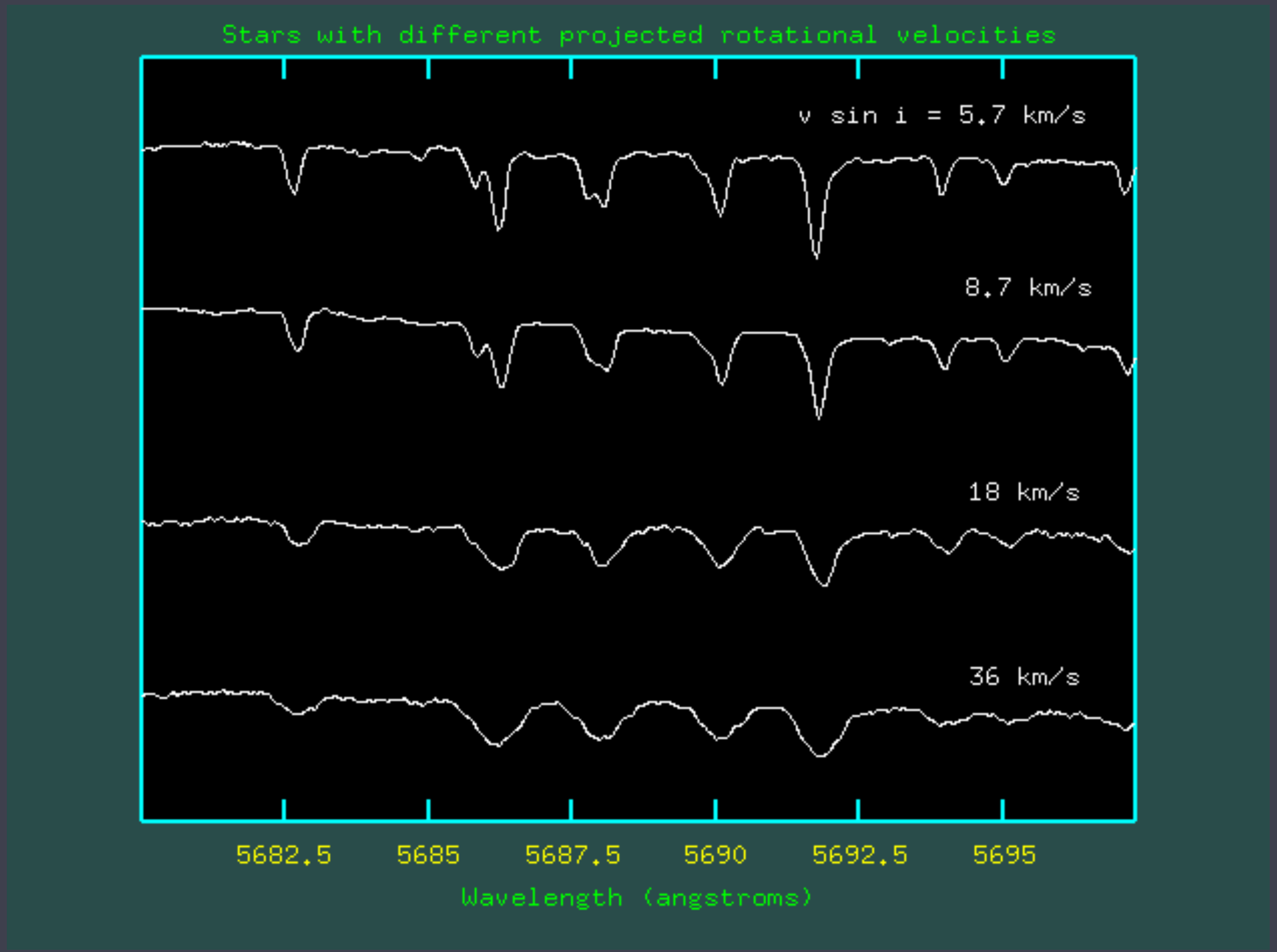
the star's velocity is changing: it's also a binary, but its companion is too dim to show up in the spectrum

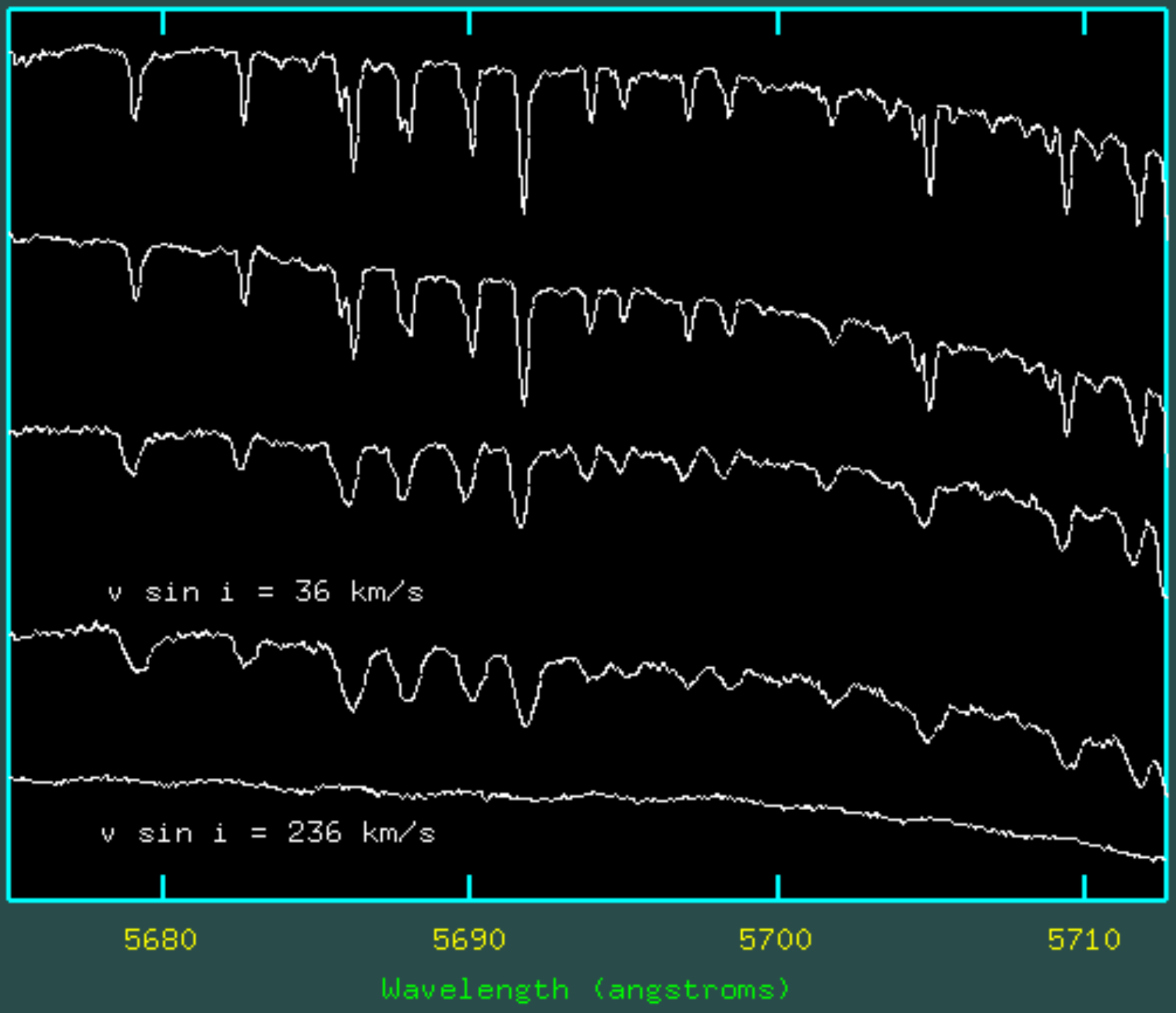


same star, two consecutive nights: what's going on?

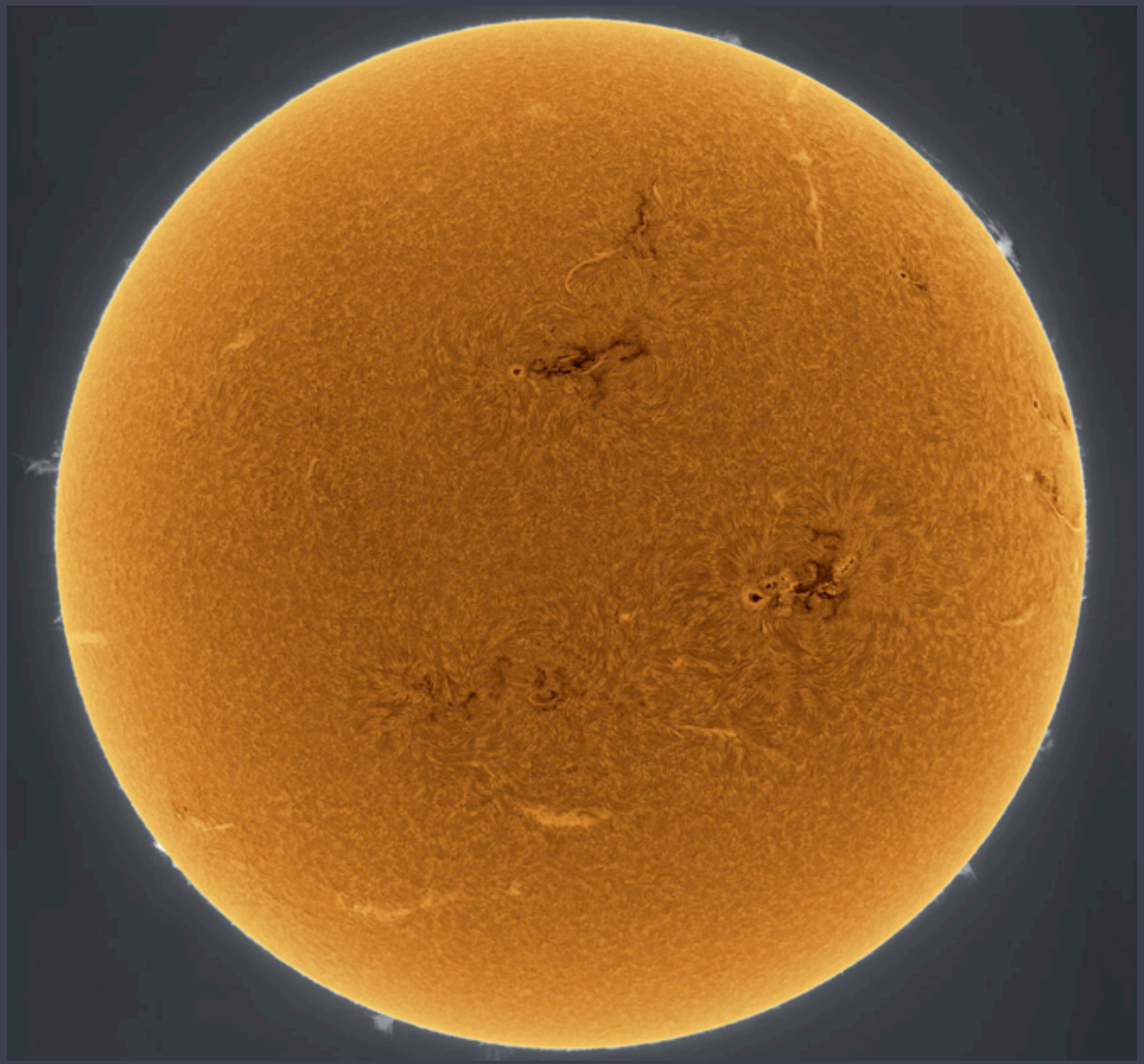


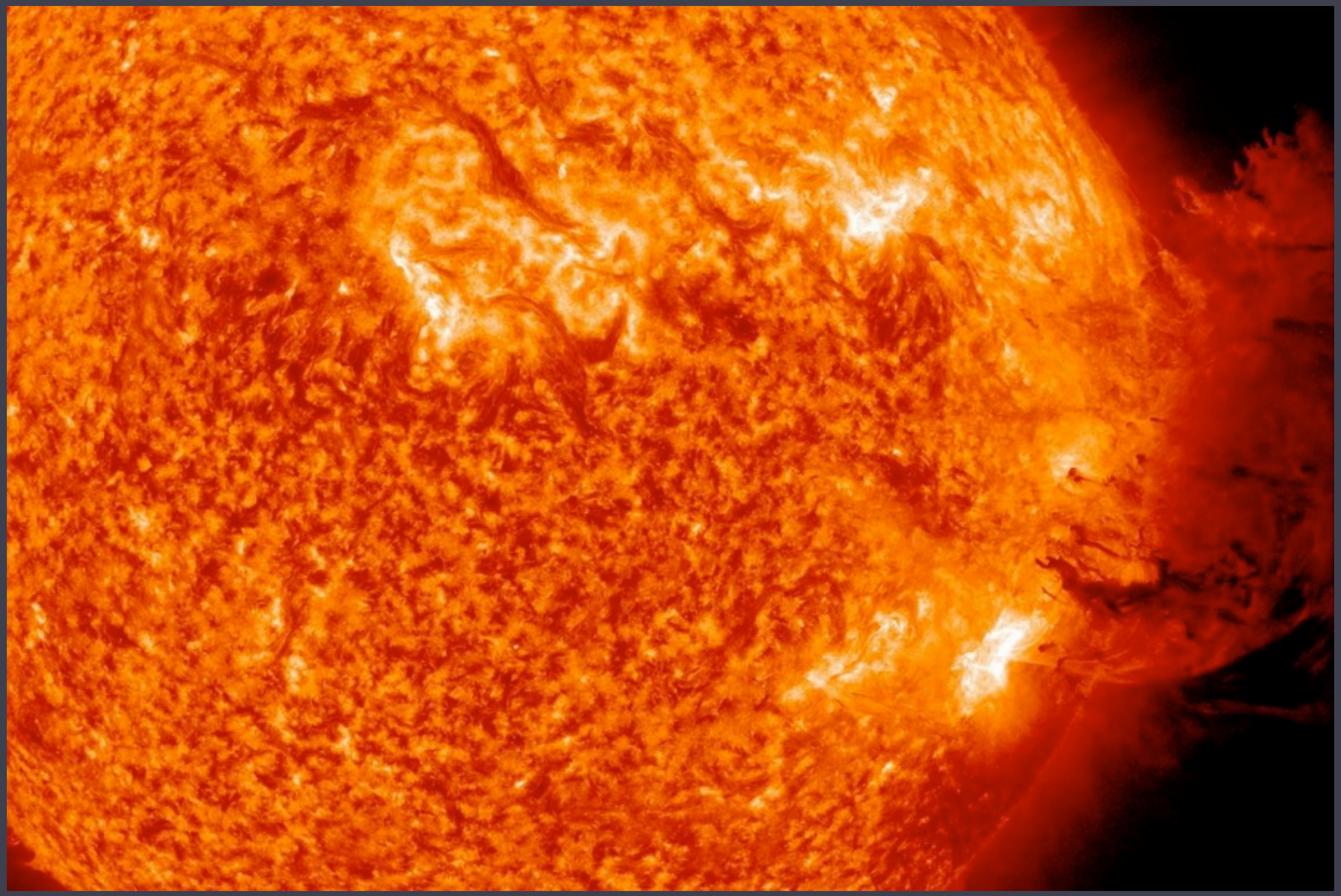
stellar rotation broadens spectral lines




v sin i = 36 km/s
v sin i = 236 km/s
5680
5690
5700
5710
Wavelength (angstroms)

sunspots, “activity” (like flares) - star’s surfaces have their own intrinsic variability and motions





http://www.thesuntoday.org/current-observations/a-spectacular-event-a-filamentprominence-eruption-to-blow-your-socks-off/

Limb darkening...plus sunspots and a transit of Venus