

Optics 463 — Homework for Wednesday, August 26, 2020

(A real slow start)

1 Is the transverse Doppler shift of the moon measurable?

Year 2023, the “Artemis” NASA mission is on the moon with a high resolution wavemeter. Jan Hall’s one micron wavelength laser with one Herz bandwidth is beamed at that detector. Is that sufficiently narrow bandwidth? If not, what is the minimum bandwidth required? How long do you have to track the detector on the moon with your laser beam in order to do this measurement?