AY 7B Assignment 4
due: Friday, March 8

Problem 1: Consider a very simple model of our Galaxy, in which the tangential velocity $\Theta(R) = 200$ km s^{-1} everywhere. Calculate and plot $V_r(l)$, the heliocentric radial velocity as a function of Galactic longitude l, for gas in circular orbits with $R = 4$, 6, 10 and 12 kpc. Assume that the Sun's distance from the Galactic center is $R_\circ = 8$ kpc.

Hint: For each ring of radius R, vary the Galactocentric azimuth ϕ through all possible angles. Find the longitude l for each (R, ϕ) pair.

Problem 2: C & O, Problem 24.3

Problem 3: C & O, Problem 24.9

Problem 4: C & O, Problem 24.15

Problem 5: C & O, Problem 24.18

Problem 6: C & O, Problem 24.27