

ASTR450 Homework # 5 – Two Body Motion  
Due Tuesday, March 24

Reading: Finish reading Danby's Chapter 6. You can skim sections 6.6 & 6.7, and skip sections 6.8-6.13.

1. Danby: Page 136, Problem 2 (Hard). The relationships between  $\nu$ ,  $E$  and  $M$  will be useful as will the discussion and plot on page 133.
2. Danby: Page 136, Problem 6 (Moderate). For what value of  $q$  is the time spent inside 1 AU maximum, and what is the maximum time? Give a physical reason for why this value of  $q$  is "reasonable" (draw a picture).
3. Danby: Page 137, Problem 9 (Moderate). The problem is asking for the time average of  $r$ . Use Danby's hint!
4. Danby: Page 137, Problem 12 (Moderate). If we increase Earth's orbital eccentricity while leaving its semimajor axis constant, does it receive more sunlight over a year or less?