

**29:52 Exploration of the Solar System**  
**Homework Assignment # 4**  
**Assigned: February 25, 2008**  
**Homework Quiz Due: March 3, 2008, 8 AM**

1. You are having insomnia, and get up at 3AM. You see the 3rd quarter Moon, get out your SC1 star chart and see that its celestial coordinates are right ascension = 23h30m, declination = -3d. Will there be a solar eclipse in 1 week? Be sure you understand why or why not.
2. A car is driving at 60 mph due north, swings around a curve moving at the same speed the whole time, until it is going at 60 mph due west. Has it accelerated during this time?
3. There is a gravitational force between the Earth and the Sun, which is responsible for the motion of the Earth in its orbit. If the semimajor axis of the Earth's orbit were 5 astronomical units, how much bigger or smaller would this force be, or would it be the same?
4. See the textbook, p98, problem #8.
5. See the textbook, p98, problem #14.