Union College Spring 2016

**Astronomy 50 Lab: Rotation Period of the Earth:**

Find a location with a clear view of at least part of the sky with a foreground object along the line of sight, and that you can visit regularly. This can be in your dorm room, if you can see the sky through your window, and you can use a corner on the molding in your window are your foreground object. Or, you can stand in front of Reamer and look at the sky behind the top of the Nott.

On the first clear night, go to this spot, find a bright star (be sure, though, that it is NOT a planet, nor the North Pole star), and note the exact time that the star passes at some exact location relative to the foreground object (such lining up with the spire at the top of the Nott). Record the date and time of this event. Draw a picture to help remind you of the exact alignment.

On the next clear night, return to this spot 10 minutes *in advance* of the time that it occurred before, and watch for the alignment to occur again. Note the exact time.

Repeat on a third clear night.

Considering the times of the alignment and the number of days between your observations. calculate the period of the apparent rotation of the sky, as inferred by watching the stars.

**Additional questions to consider discussing in your report**:

1. The rotation period of the Earth as measured by the stars is called the “sidereal period” of the Earth’s rotation? Is this period exactly equal to 24 hours? If not, why not? (If unclear, ask your instructor for guidance.)

2. What is the actual rotation period of the Earth?