

# 1 Lab 2: Formation of the Moon

First, a little reminder on how big the moon is:

<https://www.youtube.com/watch?v=Tqt9hZcWhJM>.

Now, skim through the questions in section 1.1 below, and then answer them as you read through the paper "A Tidal Theory of the Evolution of Satellites"

<http://articles.adsabs.harvard.edu/pdf/18790bs.....3...79D>.

## 1.1 Questions

- Draw a picture of the fluid planet and its satellite **before** friction is added. Show the direction the Earth is spinning and the satellite is orbiting.
- Draw a picture of the fluid planet and its satellite **after** friction is added, and label the angle of lagging. Show the direction the Earth is spinning and the satellite is orbiting.
- The Earth (ignoring the oceans) is not particularly fluid now, so why can we use this model?
- What causes the day to lengthen? What causes the month to lengthen?
- For which two periods does the author calculate the length of the day and the month to be the same?
- Explain what it means for the period of the day and the month to be the same.
- Draw a picture demonstrating the current obliquity of the Earth with respect to the lunar orbit, and label and numerically give the angle.
- If you go back in time, is the obliquity of the Earth increased or decreased?
- What is the author's theory for the formation of the moon?

Now watch this YouTube video and answer the following questions

<https://www.youtube.com/watch?v=AKqq4MF3fns>:

- What are the different outdated theories of formation of the moon and why are they ruled out.
- Go back to section 1.1 and think of whether this theory is ruled out or not.
- What is the most popular theory of formation?