NORTHERN ILLINOIS UNIVERSITY

PHYSICS DEPARTMENT

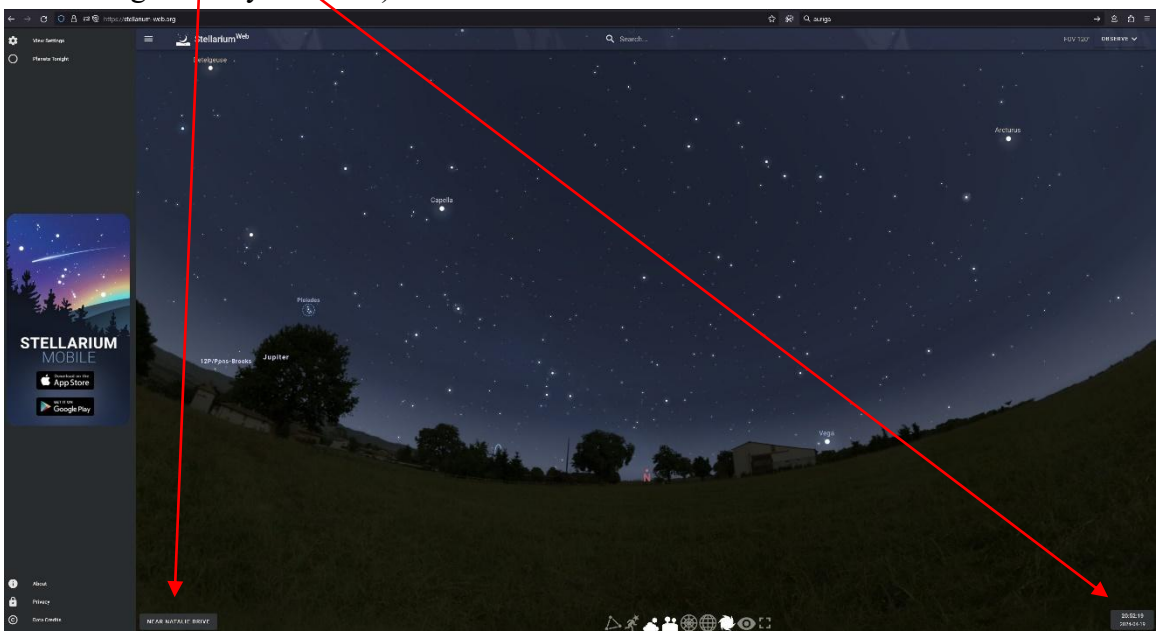
Physics 162 – Introductory Astronomy Fall 2026

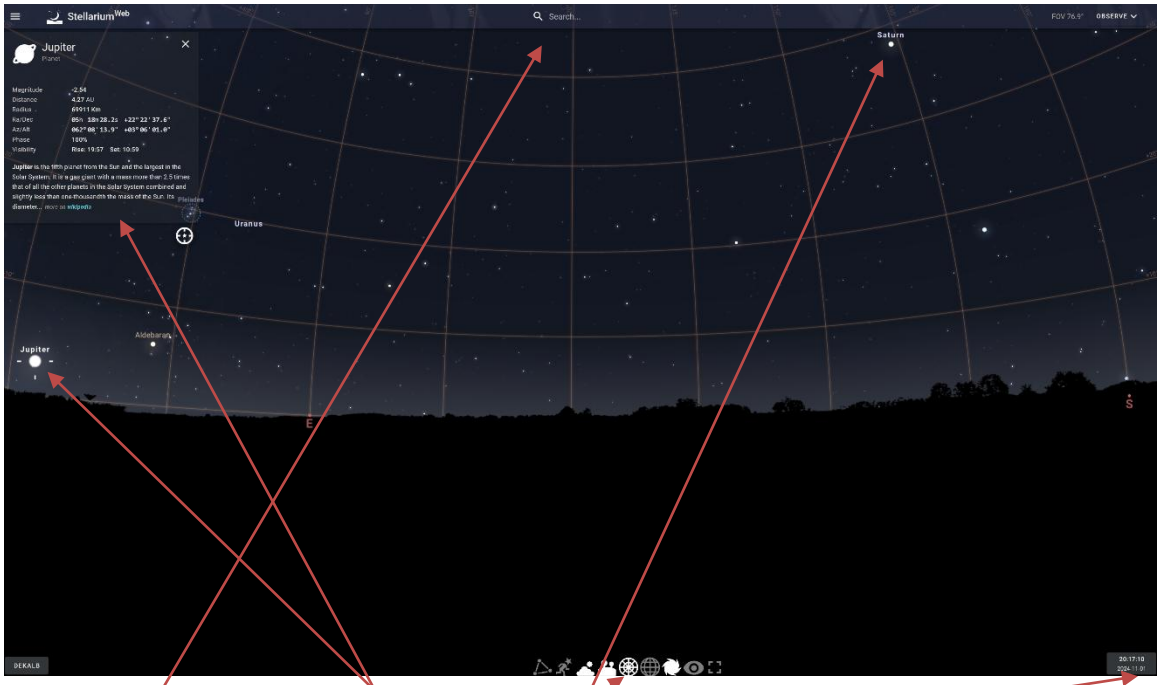
Problem Set #8

Problem Set Due: Thurs., Nov 5, 2026
Read OpenStax: Chapter **11**

Show explicitly all your work for full credit.

1. Expert TA: 11.1.2 multiple choice
2. Expert TA: 11.1.3 multiple choice
3. Expert TA: 11.1.5 multiple choice
4. Expert TA: 11.1.14 multiple choice
5. Expert TA: 11.1.18 multiple choice
6. Expert TA: 11.1.34 multiple choice
7. Expert TA: 11.1.42 multiple choice
8. Expert TA: 11.2.1 show calculation
9. Expert TA: 11.3.1 write in order
10. Expert TA: 11.6.1 true/false
11. Expert TA: 11.6.17 true/false
12. Expert TA: 11.6.23 true/false
13. Expert TA: 11.6.24 true/false
14. Expert TA: 11.6.31 true/false
15. Go to the Stellarium Webpage: https://stellarium-web.org/
    Click on the *tab* in the bottom left corner and select your location as DeKalb, Il. The *date* in the bottom right corner should be today in the evening (if you click on it, you can change the day and time).





(a) Do a *search* for the planets *Jupiter* and *Saturn* using the search box at the top of the screen. Set the date to *today's date* using the tab in the bottom right-hand corner. Adjust the time of day so that Jupiter appears just above the horizon. Then you should be able to see both Jupiter and Saturn at the same time (as shown above) by adjusting the time or zooming the screen out with your mouse scroll wheel.

Turn on the *Azimuthal Grid* by clicking on it. You should see a grid like in the picture above. Click on Jupiter or Saturn if the *info box* on azimuth and altitude (Az/Alt) disappears. Record the azimuth and altitude coordinates of Jupiter and Saturn as well as the date and time. Take a snapshot of your screen using the *snipping tool* in Windows or the Mac, and insert this into your homework. Also, in your snapshot, draw arrows to Jupiter and Saturn as I did in above. You can draw these arrows in Microsoft Word by using the **"Insert"** menu tab, click on **"Shapes"**, and click on the **arrow symbol**.

(b) Do a *search* for the planets *Uranus*, *Neptune* and *Pluto*. Record their azimuth and altitude coordinates as well as the date and time. If any of these planets are in your snapshot in Part (a), point to them using red arrows.