

NORTHERN ILLINOIS UNIVERSITY

PHYSICS DEPARTMENT

Physics 162 – Introductory Astronomy

Spring 2026

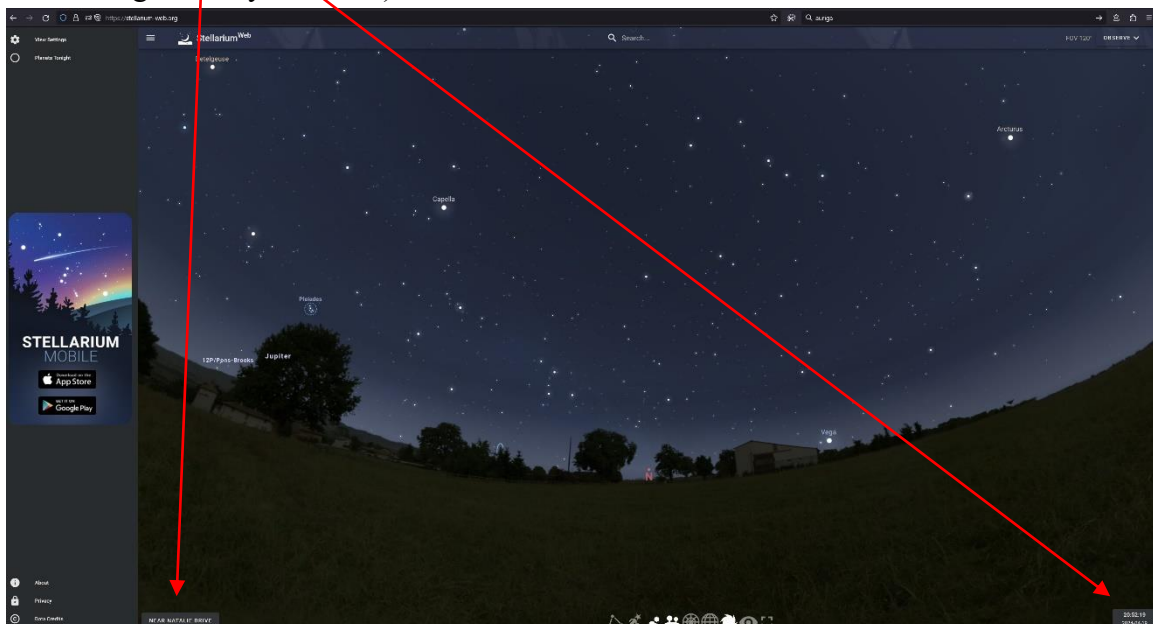
Problem Set #7

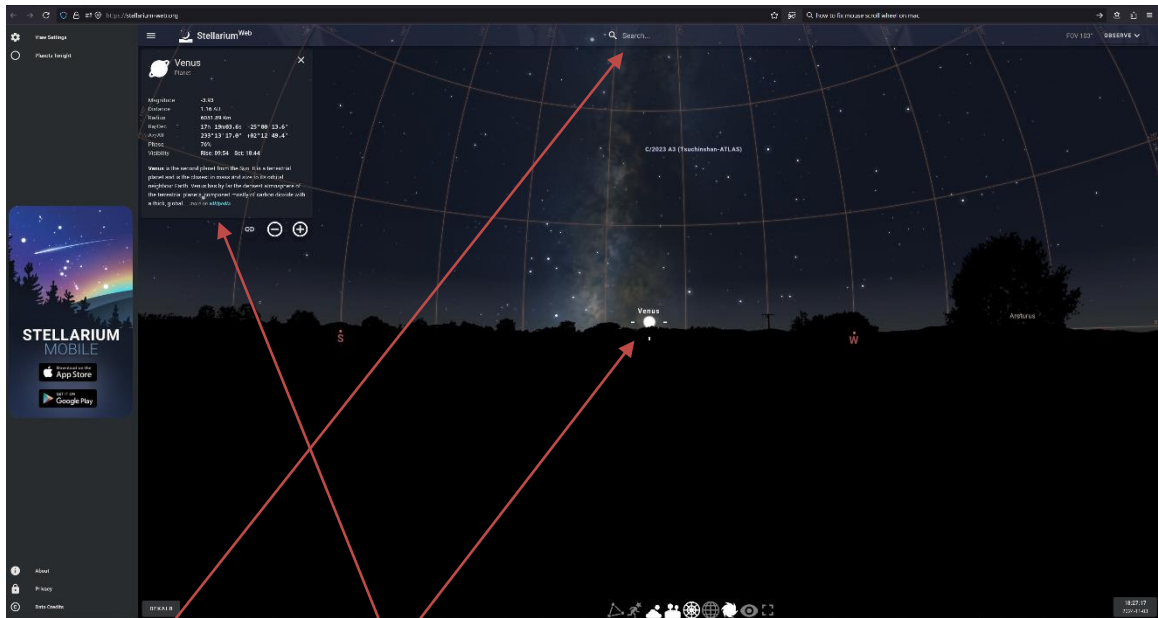
Problem Set Due: Thu., Mar. 26, 2026

Read OpenStax: Chapter **10**

**Show explicitly all your work for full credit.**

1. Expert TA: **10.1.2** multiple choice
2. Expert TA: **10.1.3** multiple choice
3. Expert TA: **101.5** multiple choice
4. Expert TA: **10.1.9** multiple choice
5. Expert TA: **10.1.11** multiple choice
6. Expert TA: **10.1.29** multiple choice
7. Expert TA: **10.1.32** multiple choice
8. Expert TA: **10.1.38** multiple choice
9. Expert TA: **10.2.4** show calculation
10. Expert TA: **10.3.2** write in order
11. Expert TA: **10.3.3** write in order
12. Expert TA: **10.6.1** true/false
13. Expert TA: **10.6.11** true/false
14. Expert TA: **10.6.28** 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).





Do a *search* for the planet *Venus* using the search box at the top of the screen. Insert *today's date* using the tab in the bottom right-hand corner. If Venus slips below the horizon, you can change the time (minutes) so that Venus appears above the horizon.

(a) Turn on the *Azimuthal Grid* by clicking on it. You should see a grid like in the picture above. Click on Venus if the *info box* on azimuth and altitude (Az/Alt) disappears. Record the azimuth and altitude coordinates of Venus 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 in your homework. Verify that the coordinates are correct by magnifying the screen with your mouse scroll wheel.

Az = 234°

Az = 235°

Az = 236°



The coordinates of Venus on 2024-11-03 at 18:31:09 was Az/Alt = (233° 53' , 1° 38'). The other units (seconds) change too quickly to record by hand. (Make certain you use today's date, not last year's date, when you get the coordinates.)

(b) Do a *search* for the planet *Mars*, take a snapshot of your screen with a *snipping tool*, and record the azimuth and altitude coordinates of Mars as well as the date and time.

(c) Go outside on a clear evening night to see if you can see either Venus or Mars. Is Mars visible in the *evening sky* at this time of the year? When is Mars visible in the *nighttime sky* at this time of the year?