Introduction to Observing with VAO

Objectives:

During this lab, students will:

1. Review navigation of the night sky
2. Learn about the Van Allen Observatory on the roof of Van Allen Hall.
3. Plan an observing session for the Van Allen Observatory.
4. Conduct Observations using the Van Allen Observatory

Checklist:

- Complete the pre-lab quiz with your team (if required).
- Compile a list of resources you expect to use in the lab.
- Work with your team to complete the lab exercises and activities.
- Record your results and mark which resources you used.
- Share and discuss your results with the rest of the class.
- Determine if your team’s answers are reasonable.
- Submit an observation request for next week (if required).
## Pre-Lab Quiz

1. 

2. 

3. 

4. 

5. 

6.
Pre-Lab Follow Up Questions

1. Assume the diagram below is for Iowa City, IA, which is at a latitude of 41.6 deg (~42deg). Identify the North Celestial Pole (NCP), Celestial Equator, Zenith, the Horizon, and the Meridian.

2. If stars with a right ascension of 6 h are currently on the meridian, what is the local sidereal time (LST)?

3. What is the LST tonight at 8 pm?
Part 1: Observing with VAO

1. In terms of cameras, what does resolution mean? What does field of view (FOV) mean?

2. Look at the Spec Sheet for VAO and determine the resolution and FOV of VAO.

3. On a good night, what’s the smallest object that VAO can see? What about a bad night? If you wanted to observe an object that is 3 arcseconds in size, on what kind of night would you want to observe it?
4. Why does VAO have filters? What does each filter do?

5. Pick four objects that will be up tonight during lab. You can use star wheels, Stellarium, SC001 star charts, or the Rise and Set Calculator on the Iowa Robotic observatory to aid you. Then, using the RST calculator, record when your objects are above the horizon tonight and what time it is best to observe them.

<table>
<thead>
<tr>
<th>Object Name</th>
<th>RA (RA)</th>
<th>Dec (Dec)</th>
<th>Rise and Set Times</th>
<th>Best time to Observe</th>
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6. Choose one or two objects from your table. It is best to choose objects that are transiting during lab. Determine which filters and what exposure times you would use for each object.

7. Research your object and write a brief summary about it.