

Lab 3b. The Sky #2

Equipment

- Sky Charts SC-1 and SC-2 of Esso – Sky Publishing Corporation

Mini Lecture, Procedure, & Setup

- Students should be able to start and complete this lab on their own.
- If you do this lab in class, please go over RA and Dec
- Part II can be illustrated nicely by using an Earth-Sun Demo (This demo may also have the other planets and the Moon). Let the students visualize the meaning of “solar time” by imagining they are on the “lit side of the glob, and by considering the rest of the classroom as background stars – the stars cannot be seen when looking in the direction of the Sun.
- Another nice method is to have four students stand around a student in the center, who represents the Sun. Have them turn of their axis, asking them what time of the day it is, and which stars of which wall they see. To entertain them further you could have them tilt at as 23° angle and then rotate...
- Part III is testing the students’ understanding of the general concepts.
- The last question in the lab report really is difficult.

General Concepts & What students might get out of this Lab

- How to read sky charts, and – hopefully – how to translate this exercise from paper to the real sky.
- A sense of how to figure out what’s up in the sky and how this depends on the time of the night and on the season.
- A sense of why it takes a year to go though the range of constellations (solar versus sidereal time)
- If they did Part II using a demo (or themselves), they will get a good conceptual understanding of night, day, and the seasons. This really beats and paper and pen exercise.

Notes & Suggestions

- This lab can be omitted – it lab is mainly intended as a continuation of Sky-Lab-#1 (or for extra credit), but can also be done on its own or assigned as the “Do-at-Home” version of Sky-Lab-#1.
- Parts II and III can be done using a star-finder like on the first page. In fact, this exercise will become somewhat easier that way and can be done more quickly. The drawback is that once the students know how to use the star finder, they can just “read off” the answers without really understanding how it works. Nevertheless, after having done Part III from the Sky-Charts, you could show them how to do it with the star finder.
- Even after successfully doing this lab, students often still do not quite know what’s up when. A constellation spotting session may help with this.