



Launch to the Milky Way – What is SkyServer?

Don't forget to record data and observations as you work through this activity. All of the questions and reminders from the activity are listed in order below.

1. What is a database? What kind of information is stored in the SDSS database?
2. How do astronomers define a constellation? What constellations are you familiar with? Can you describe how much of the sky a constellation occupies?
3. Predict how you think Regulus will look in the SkySever Navigate tool.
4. **Difference – I can't see the constellation!** After following the instructions in this section, describe the differences between the field of view your eyes have when looking up at a constellation versus the field of view of the SDSS telescope.
5. What happens to the apparent field of view when you zoom in or out in Navigate?

6. **Difference – The stars are a lot brighter!** The SDSS telescope is engineered to maximize its ability to gather the light of faint objects. In doing so, the design of the telescope and instruments sacrifice the ability to study bright objects.
 - a. Describe the results of these engineering design choices on the images you see in Navigate.

 - b. Every design decision involves a trade-off of some kind. What are the trade-offs for design choices for the SDSS telescope/camera system? Describe one.

 - c. What steps do you think SDSS scientists and programmers have to take to deal with the trade-off you described above?

7. **Difference – Regulus looks a lot bigger!** Why does Regulus appear to be a large circle in Navigate?

8. What is a CCD designed to do?

9. Create a list of design features of the SDSS camera and their consequences.

Feature	Result
Camera has 30 CCDs	Large surface area for collecting light

10. SkyServer allows you to find objects visually in the SDSS database. All of the information connected with each object you see remains available. From Navigate, where can you go to view information about an object? You don't need to understand all of the pieces of information at this point; just list their locations below.
11. Create a collection of objects in your NoteBook. Try uploading your collection to image list. Do a screen capture of your results and place them below, or describe two ways you can access more information about your objects from the NoteBook.