

Fundamentals of Stargazing – Month 12 Worksheet

Project #1: Have a go at the deep-sky objects listed this month. Each of them is a challenge object for a telescope of less than 8” aperture. My personal favorite is NGC 2419, the “Intergalactic Wanderer”, a globular cluster more than 275,000 light years away, more than ten times the distance to the Hercules Cluster. Also, the small and enigmatic NGC 1999, a little keyhole-shaped nebula just south of the Orion Nebula, is particularly satisfying to find and observe in detail.

Project #2: If you are interested snapshot astrophotography, a form of electronically-assisted astronomy (EAA), either for outreach or your own personal interests, consider investing in an astronomical camera for your telescope as outline in this month’s course notes. To learn more about EAA, go to a star party with a local astronomy club where some of the members might be operating such cameras. They will be happy to answer questions. These cameras are not terribly expensive, and if you already have a telescope and motorized go-to mount, you need not invest that much more to get started in EAA. The astronomy website CloudyNights.com has an EAA forum where you can learn more about the subject. This guide by the U.S. astronomy supplier Agena AstroProducts also has a wealth of information about equipment for snapshot astrophotography:

<https://agenaastro.com/articles/guides/adena-beginners-guide-to-choosing-equipment-for-deep-sky-eaa.html>

Project #3: Make sure you review the sky tour this month. It takes you through the constellation Orion, the constellation in which you began the course a year ago, and highlights the things you have learned in *Fundamentals of Stargazing*. You have come a long way.

Project #4: What’s the difference between a solar prominence and a filament? What type of solar filter is necessary to safely see these phenomena?

Project #5: If you don’t have a solar filter yet, or even if you do, set up a simple projection system for observing the visible surface of the Sun. Poke a hole with a pin through a piece of cardboard about 4” square (the exact dimensions are not critical). Find a room in your house or apartment with a window with a view of the Sun. Turn out any lights in the room and pull the shades as much as possible to darken the room. Arrange for sunlight to enter through the small hole punched in the cardboard near the window. Set up a white piece of paper across the room to catch the Sun's image. Don't look through the hole directly at the Sun! But look at the spot of light that falls on the paper. If large sunspots are present, you will be able to see them.

To see if sunspots are visible on the Sun right now, have a look at this link:

<http://sohowww.nascom.nasa.gov/sunspots/>