

# Fundamentals of Stargazing – Month 1 Worksheet

**Project #1:** Find a clear spot with a good view of the night sky. Identify the following features of the celestial sphere (reference: Science, p.1-8)

- Horizon, Zenith, Nadir; Cardinal Points (North, East, South, and West)
- Celestial Meridian; Celestial Equator (hint: it runs east-west and nearly passes through Orion’s Belt)
- North Celestial Pole (near Polaris) **OR** South Celestial Pole (use Crux and the Southern Pointers)
- The ecliptic (which passes through the constellations Taurus and Gemini)

**Project #2:** Using your handy-dandy “tools”, that is, your hands and fingers held at arm’s length (ref: Science, p. 9-10), estimate the angular sizes of these celestial features:

- The Big Dipper (northern hemisphere)
- The Moon
- The distance from Capella (in Auriga) to Betelgeuse
- The width of Orion’s Belt

**Project #3:** Find the constellations listed in the Sky Tours (North/South)

- North (Orion, Taurus, Canis Major, Auriga, Canis Major, Eridanus, and Lepus)
- South (Orion, Taurus, Canis Major, Gemini, Canis Major, Puppis, Eridanus, and Lepus)

Locate the following bright stars from the Sky Tours (North/South)

- Betelgeuse, Rigel, Mintaka, Sirius, Aldebaran, Capella, Polaris (north only)
- Bellatrix, Saiph, Mirzam, Wezen, Alnath

**Project #4A:** Examine the Pleiades without optical aid. How many stars can you see?

**Project #4B:** Without optical aid, try finding the closely-spaced stars of the Hyades, the “Deltas”, “Sigmas”, and “Kappas” (ref: Deep Sky, p. 3)

**Project #5:** Sit in a dark room for 20 minutes to let your eyes become dark adapted so that you can see some detail of objects in the room. Keep both eyes open, but cover one eye to prevent light from entering. Then turn on the room lights for 10 seconds. Turn them off again. Look around the room with the eye that was exposed, then with the eye that was covered. Notice the difference in sensitivity in seeing the objects in the room. It only takes a few seconds to lose dark adaptation, and 20-30 minutes to develop it (ref: Observing, p.2-3)

**Project #6:** Using one of the suggested apps or references, and with a pair of binoculars, look at the planet Jupiter and try to identify the moons of Jupiter visible at that time; they will change position from night to night (ref: Solar System, p. 11-14).