

Observation 1

Complete as soon as reasonably possible.

1. Before sunset, collect a pencil, a watch or clock, and a piece of blank paper. Print the star chart on the following page. Find a viewpoint from which to observe the setting sun that you can return to precisely, e.g. the top of a fencepost or the corner of a building. Draw the western horizon and the silhouettes of whatever sticks up.
2. Go outside a few minutes before the sun sets (around 8:30 pm in Edmonton in late August). From your selected viewpoint, indirectly watch the sun set over the horizon. **Do not stare at the sun.** Record where the sun sets. Also, as accurately as possible record the time when the last bit of the sun sets. Record the date of your observation.
3. Return outside when it gets dark enough to see many stars (perhaps 9:45pm in Edmonton). Use your printed star chart (made for late August in Edmonton when it gets dark) with as little light as necessary. (If you have a red light, use it.) Notice that the chart is made to be held above you. Align the W in the direction in which the sun set. Find the Big Dipper (which is part of the constellation Ursa Major) and using the “pointer stars” (the two stars of the cup part of the dipper that are farthest from the handle) find Polaris, the pole star. Follow the extension of the Big Dipper’s handle (away from the cup part of the dipper) to find the next bright star, which is Arcturus. A way to remember this is that you “arc to Arcturus” Find Cassiopeia, which looks like a W or M, standing opposite the Big Dipper. Find the Summer Triangle, which is formed by the three stars Deneb, Vega, and Altair. These are three of the brightest stars in the sky. Deneb and Vega will be almost directly overhead and Altair will be to the south. Use these three stars to trace out the constellations of Cygnus, Aquila, and Lyra. See if you can find any of the other constellations on the chart.
4. Find the star Arcturus again. Using your hand at arms length (see image below), estimate the height of this star above the horizon. Record this height and the time.
5. Once you have finished this last task, stay outside or return in one or two hours (the longer the better). Try to find the Big Dipper, Polaris, the Summer Triangle, and Arcturus again. How have they moved? How high is Arcturus above the horizon?



