Name: _____

Date: _____

Section: _____

Astron 104 Laboratory #1
Star Maps

The following questions refer to the attached constellation chart. In answering the questions, please estimate Right Ascension (R.A.) to the nearest two minutes (there are 60 minutes in each hour) and the Declination (Dec.) to the nearest half-degree. Remember: R.A. is divided into 24 hours, each of which has 60 minutes; Dec. is divided into 180 degrees (-90 to $+90$).

1. Locate Betelgeuse (α Orion). What are the R.A. and Dec. of this star? **[5 pts]**

2. Locate Sirius (α Canis Major). Sirius appears to be the brightest star in the sky. Look carefully at the map: there are stars with brighter absolute magnitudes even just in Canis Major. What can you conclude about the relative positions of these stars with respect to the Earth? **[5 pts]**

3. (a) What is the absolute magnitude of Sirius? **[5 pts]**

   (b) Please explain how you estimated its magnitude. Feel free to use the ruler given to you. **[5 pts]**

4. (a) How accurately can you determine the magnitude of Sirius based on this chart? **[5 pts]**

   (b) Explain how you quantitatively estimated the accuracy with which you measured the magnitude of Sirius? **[5 pts]**

5. Locate the four stars (Betelgeuse, Bellatrix, Rigel, Saiph) that outline the constellation of Orion. What are the greek letters that designate these four stars? **[5 pts]**

6. List the constellations that the ecliptic crosses. **[5 pts]**

7. How many galaxies can you find? What are the galaxies called (what are their Messier numbers)? **[5 pts]**

8. Which constellation do you think is the most visually interesting? Try not to focus on the constellation with the brightest stars. **[5 pts]**

9. Explain why you chose the constellation that you did. [**5 pts**]

10. What would **you** name this constellation? [**5 pts**]

11. At R.A. of 03 hours and Dec. of $+24^\circ$ is the Pleiades. What type of object is that? [**5 pts**]

12. In which constellation are the Pleiades? [**5 pts**]

13. There is a cluster in the constellation Cancer. What are its two names? [**5 pts**]

14. What is the R.A. and Dec. of the object in question #13? [**5 pts**]

15. Name the constellations that have more than two (> 2) double stars. [**5 pts**]

16. Name a constellation that you know for a fact (or expect) can be seen in Milwaukee at some point during the year. **[5 pts]**

17. Name one constellation that you think (or guess) is never visible from Milwaukee. Explain your reasoning. **[5 pts]**

18. What type of star is ζ Phoenicis (i.e., star "ζ" in the constellation Phoenix). Can you find another star like it and if so what is its scientific name? **[5 pts]**