

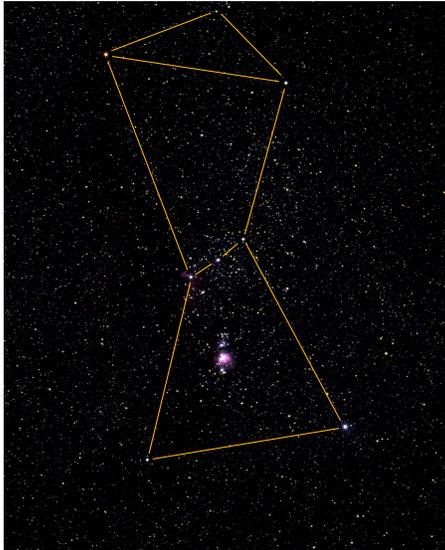
HW 4 A2020 Out 2/9/2010 Due 02/16/2010

You will draw an HR diagram!! You will need some sort of straight edge (ruler) and two distinct colors for marking the positions of stars in two star clusters (using different colored pens, colored pencils, or crayons).

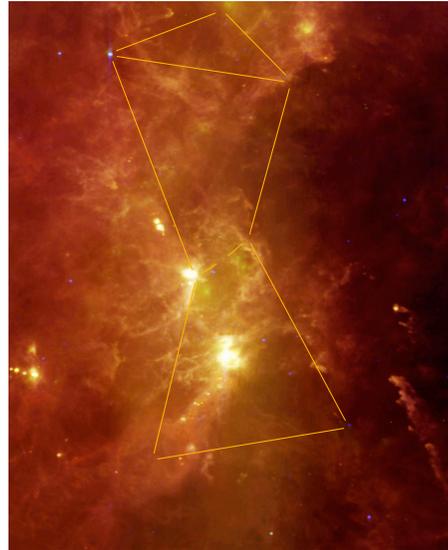
1. (4 pts) On a separate sheet of paper, draw an HR diagram. Label the axes and the values on the axes. On the x-axis, put **both** temperature and spectral type. Lecture 8 has some great examples to guide you. Draw a curve where you would expect to find the main sequence.
2. (3 pts) In the HR diagram, draw the positions (approximately) for stars in two clusters of stars: one with an age of 100 Myr (100 million year) and one with an age of 7 billion years. Use distinct colors for the two clusters. Label where the main sequence turnoff point is for each clusters (again, see lecture 8 for guidance).
3. (3 pts) In the diagram, draw the pre-main sequence track (path) that the Sun took after it stopped being a protostar (stopped accreting gas) and before it became a main sequence star. Label this track. See lecture 9 for help.

4. (2 pts extra credit) On the left we have visible light images of the Orion region, and on the right we have an infrared image of Orion. The visible light images looks very different than the infrared image. Why is this the case? This requires an understanding of blackbodies.

Optical image of Orion



Infrared image of Orion



5. (2 pts extra credit) Here are two images of the molecular cloud B68. Which image uses infrared data? How do you know?

