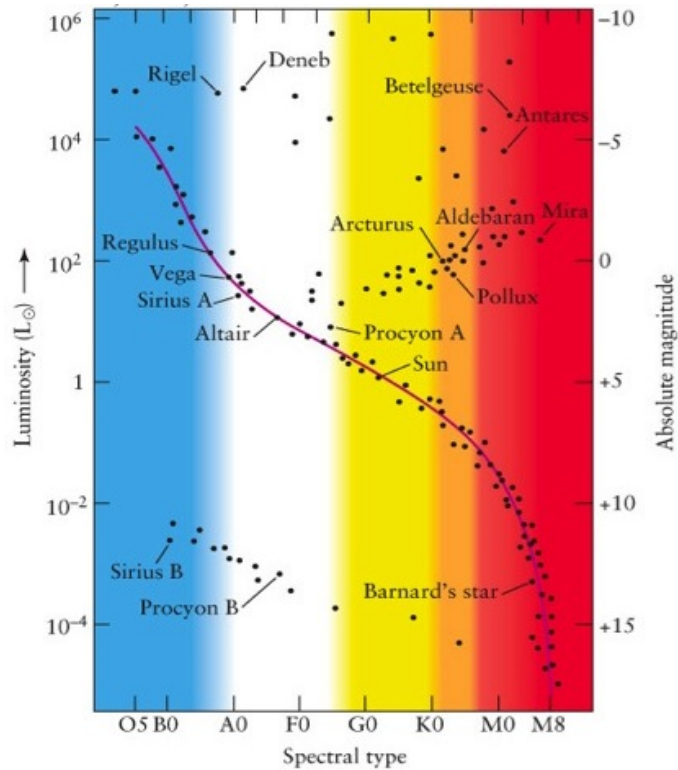


Name: \_\_\_\_\_

**PRE-LAB QUIZ #7 (10pts)**

Referring to the HR diagram below, answer the following questions.

1. Which star is hotter, the Sun, or Altair?
2. Which star is more luminous (brighter), the Sun, or Betelgeuse?
3. Which star do you think is larger, the Sun, or Betelgeuse?



The distance to a star,  $d$ , can be found from the difference between the Absolute Magnitudes  $M$ , and the Apparent Magnitudes  $m$ . The relation is given by (with distance  $d$  in parsecs)

$$d = 10 \times 10^{(m-M)/5} \tag{1}$$

4. Observing from Earth, we find that the apparent magnitude of Betelgeuse is  $m = 0.5$ . Estimate the Absolute Magnitude  $M$  for Betelgeuse from the HR diagram above, and then use Eq. (1) to find the distance  $d$  to Betelgeuse.

5. If a star suddenly became brighter in the sky, would the value of its apparent brightness  $m$  get larger or smaller?