Introduction to Astronomy and Astrophysics II:

Beyond the Sun and Planets

ASTA02 - Winter 2023

Problem set # 1

Assigned: 26 January 2023

Due: 7 February 2023

Answer the following seven questions. Write clearly and make sure you show ALL your work. Your solution should look like an explanation to someone about how you solve the problem. Discussion of questions and ideas on how to solve the problems and checking that you got the same answer with other students is allowed. However, the problem set you hand in MUST BE YOUR OWN WORK. Do not copy any part of someone else's assignment. Do not copy solutions found from any source (e.g. websites). Hint: Pay attention to significant figures in your answer.

1. The bright star Procyon in the constellation of Canis Minor (the Little Dog) emits the greatest intensity of radiation at a wavelength of $\lambda_{peak} = 445$ nm. Approximately what is the surface temperature of the star in kelvins?

   Solution: We use Wien's law to calculate the temperature