

# PHYSICS 301

## HOMEWORK #10

Due Wednesday November 19 at 5:00 **in the front office.**

For our final homework, we'll do some Stowe problems.

1. For the difference in counting for three types of statistics, we will do three problems:  
Problem 24-20, page 418  
Problem 24-21, page 418  
Problem 24-22, page 418.
2. These three problems combine to explore what is known as Wein's law. It states that the peak frequency of a blackbody curve is directly proportional to the object's temperature. Astronomers use it to find the temperature of stars by fitting their starlight intensity data to a blackbody curve which determines the peak frequency. The blackbody curve has such a unique shape that astronomers need only two measurements to find a star's temperature. These two measurements are taken with a blue filter (the B intensity) and a yellow-green filter (which is confusingly called the visible or V intensity). Sometimes this "B-V" ratio will be the only indicator of temperature used in astronomical journals and catalogs.  
Problem 26-3, page 453.  
Problem 26-4, page 453.  
Problem 26-5, page 453.
3. One final astronomy related question.  
Problem 26-10, page 453.