

Physics 104, Astronomy
Spring 2010
Midterm 2 Study Guide

I will not ask you to do any math on the exam. You are allowed to bring one 8.5" by 11" page of notes (both sides) to the exam. The exam will cover the topics listed below. The relevant chapters are listed in the syllabus.

Planetary Formation

What is the leading planetary formation theory?
Why is it successful? (what does it explain?)

Why do clouds of gas collapse?
Why happens to the rate that they are spinning?
Why does the disk form?

What was the composition of the nebula that the solar system formed from?

Why do jovian planets and terrestrial planets form in different parts of the disk?
What condenses near the Sun? What condenses far from the Sun?
What is the frost line?
How does the composition of the jovian planets differ from the terrestrial planets?

What is the composition of Pluto and other objects at the outer edge of the solar system?

Light

What are the three different ways that light and matter interact?

Blackbody emission

What type of object emits like a blackbody?
How does the blackbody curve change with:
Temperature?
Size?

Be able to compare two curves and discuss the differences between the objects that created them.

Emission lines (what the heck are they?)

Under what conditions do we see emission lines?
Under what conditions do we see absorption lines?
What information can we get from emission/absorption lines?

Absorption

Why does my coffee mug appear red?

Why does the spectrum of the Sun appear the way that it does?

What is Doppler shift (as it relates to light)?

What information can I get by looking at Doppler shift?

Atmospheres

What determines whether a planet can hold an atmosphere?

Why is the atmospheric pressure at sea level higher than that on a mountain top?

The Greenhouse effect. In detail.

Global warming. What is it? What is the evidence?