

AST 301: SCALO
GUIDE TO READING AND STUDY: EXAMS 1-3
CHAPTERS (1-3.4), (3.5, 4,5), (6,15)

This list is meant to tell you in detail which sections will (and will not) be covered on exams, and mostly to suggest review questions at the end of each chapter. *I will include some of them on each exam.*

For *end-of-chapter questions*, the recommended questions are marked "RD" for the "Review and discussion" questions, and "MC" for the "Conceptual self-test: Multiple choice questions." These vary considerably in difficulty, but none involve significant mathematical manipulations—I chose them as good warm-ups for exams, and because I think you should understand the corresponding material. A few questions that I consider especially useful or important are in bold font.

There are *multiple-choice questions at the textbook web site* (the "mastering astronomy" site), and most of them are good practice. You should try all the multiple choice questions for each chapter, but exclude those that are numerical calculations, or those that cover material we skipped in the class. I purposely leave out numbering these below, so that you have to at least recognize questions that are on material we are not covering.

I am assuming everyone has already gone to the "Mastering Astronomy" textbook site and clicked on "study area" to get to these questions. ("eText" takes you to an online ebook of our textbook. Then pick a chapter, and select "Multiple choice" to test yourself—the site will provide you with answers when you are through. They are somewhat simple, and should be used to gauge your understanding. You might also benefit from looking through the true-false questions as well.

You will benefit most by trying your hand at the suggested questions *after* you have thoroughly studied the material, so you can see how prepared you actually are. You will also probably find it beneficial to *think about the "Learning Goals" at the beginning of each chapter*, once before you start to read each chapter, and again when finished and/or when preparing for each exam.

→ *I suggest you go through your textbook (soon) and mark all these items (e.g. a mark next to questions listed below, "not on exam" in certain subsections, etc.), at least for the upcoming exam.*

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FOR EXAM #1

Chap. 1: Read "Scientific Notation" (App.1) and "Angular Measure" (p.11).

Mark Appendix 2 on "Astronomical Measurement" as a useful reference on units that are used in the rest of the text, in case you become confused about units.

Look through pp. 8 through 25 (topics having to do with the night sky, seasons, eclipses, ...), but you won't be tested on it because it interrupts the main flow of topics; however I urge you to read it if you want to understand the most basic astronomical events you can experience with your own eyes.

Sec.1.6: Measurement of distance--important.

RD: 1, **2**, 3, 17-19, **20**; MC 1, 2, 10. MC questions at Mastering Astronomy web site

Chap. 2: Look over sec.2.1 and 2.2 on historical topics, but they won't be on the test. Read sections on the Heliocentric model (2.3) and Birth of Modern Astronomy (2.4), but only for the basic ideas. Things like "retrograde motion" and the phases of Venus won't be on the exam.

Read "More Precisely" 2-1 (p.44), 2-2 (p.52), but of course I won't ask you to carry out any calculations related to them, except for the formulas I will explain in class.

Get serious with secs. 2.5 (Kepler's Laws), 2.6 (Dimensions of the Solar System), and especially 2.7 (Newton's laws) and 2.8 (Newtonian mechanics).

RD: **2-4**, **8-10**, 13, 14, 16, 18-20; MC 2, 4, **5**, **6**, 7; MC questions at Mastering Astronomy web site.

Chap.3: Don't worry about details concerning temperature scales ("More Precisely 3-1") or numerical aspects of radiation laws ("More Precisely" 3-2), although I still recommend you try to read them. We will postpone sec. 3.5 on the Doppler Effect to Exam #2.

RD: 2, **3**, 6b, 7, 11, **12**, 13, **14**, **15**, **16**. MC: 1, 2, 5-9. MC questions at Mastering Astronomy web site

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FOR EXAM #2

Chap. 3, sec. 3.5 on the Doppler Effect.

RD 17-19, MC 20 in Chap.3. MC questions at Mastering Astronomy web site

Chap. 4 (Spectroscopy)

"More Precisely 4-1" (p.86) and "Discovery 4-1" (p. 88) will not be on exam.

RD: 1, 3, 4, 8, 9, 10, 11. MC: 1-10 (all). MC questions at Mastering Astronomy web site

Chap. 5 (Telescopes)

In section 5.1, you won't be tested on subsections on "Reflecting and refracting telescopes" (p. 98), "Comparing refractors and reflectors" (p. 99), or "Types of reflecting telescopes" (p.101) in sec.5.1.

Read "Discovery 5-1" on Hubble Space Telescope (pp. 104-105).

MC: 4-10. MC questions at Mastering Astronomy web site.

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FOR EXAM #3

Chapters 6 and 15 are NOT in your textbook, but will be available to read (or print) online. Page numbers below maybe be off by a small amount.

Chap. 6 (The Solar System)

We will not cover the various space missions discussed in sec. 6.6. Read the "More Precisely 6-1", but such numerical examples will not be on the exam. Also read the "More Precisely 6-2" in order to understand the concept. You don't have to memorize any of the information in Table 6.1, although it might help to look at it awhile. However Table 6.2 IS important to learn.

RD: ALL; MC: ALL. MC questions at Mastering Astronomy web site.

Chap. 15 (Formation of Planetary Systems; also online only)

The "Discovery 15-1" is for your interest only, but will not be on the exam.

RD: All; TF: All. MC questions at Mastering Astronomy web site.

In later chapters we'll cover nearly all the material, so you can use any or all questions, except those that require numerical calculations. For this reason I probably won't hand out a "reading guide" for the later chapters; I'll just tell you if a certain subsection won't be covered on the exam (it will be rare, and these are mostly already on the).