# TABLE OF CONTENTS

## Homework Assignments

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework Assignments</td>
<td>2</td>
</tr>
<tr>
<td>Unit 1 – Overview of Universe</td>
<td>2</td>
</tr>
<tr>
<td>Unit 2 – Science &amp; Scientific Method, Kepler’s Laws, Motion, Weightlessness, Newton’s 3rd Law (actions-reactions)</td>
<td>2</td>
</tr>
<tr>
<td>Unit 3 – Rest of Newton’s Laws, Some Aspects of Light</td>
<td>2</td>
</tr>
<tr>
<td>Unit 4 – Rest of Light, Telescopes</td>
<td>2</td>
</tr>
<tr>
<td>Units 5 and 6 will be given out later</td>
<td>2</td>
</tr>
<tr>
<td>Homework Directions</td>
<td>3</td>
</tr>
<tr>
<td>Astronomy Test Rewrite Instructions</td>
<td>4</td>
</tr>
<tr>
<td>NQA Coupons</td>
<td>5</td>
</tr>
<tr>
<td>NO QUESTIONS ASKED COUPON #2</td>
<td>5</td>
</tr>
<tr>
<td>NO QUESTIONS ASKED COUPON #1</td>
<td>5</td>
</tr>
</tbody>
</table>
HOMEWORK ASSIGNMENTS

Unit 1 – Overview of Universe
1. Index card & clicker contract.
2. Article: Ten Important Days in the History of Astronomy. Answer 10 questions at the end. (See web page and/or handout.)
3. Answer the questions at the bottom of the “See for Yourself,” on page 8. (You don’t need the sky chart. You saw it in class.) Also do the Common Misconception interviews on pp. 7 & 13 as described on the Homework Directions page of this handout.
4. Chapter 1 end-of-chapter questions on page 24: 15, 17, 21, 24, 25, 26, 29, 34.

Unit 2 – Science & Scientific Method, Kepler's Laws, Motion, Weightlessness, Newton's 3rd Law (actions-reactions)
6. Chapter 3 end-of-chapter questions on page 89: 29, 30, 31, 32, 33
7. Chapter 4 end-of-chapter questions on page 145: 20, 22, 29, 33 and Common Misconception Interview on page 128, “Can rockets blast off if they’re falling in air?”

Unit 3 – Rest of Newton’s Laws, Some Aspects of Light
10. Chapter 5 end-of-chapter questions on page 176: 20, 22, 29, 30, 31

Unit 4 – Rest of Light, Telescopes
8. Chapter 5 end-of-chapter questions on page 176: 25, 27, 28, 35, 36, 37
9. Chapter 6 end-of-chapter questions on page 202: 14, 19, 21, 22, 25
10. Chapter 6 end-of-chapter questions on page 202: 26, 28, 29, 30, 32

Units 5 and 6 will be given out later.
HOMEWORK DIRECTIONS

**Important homework formatting instruction:** All homework should specifically list the assignment at the top of the page and include the chapter number and the types of questions/assignment being submitted. List this information at the top of the page. This will help both you and me verify that you have done the correct assignment.

- Example, “Assignment #4, Chapter 1: 15, 17, 21, 24, 25, 26, 29, 34.”

**How to do a “Common misconception” homework assignment**

- Read the Common Misconception on the page indicated and understand it. Then ask 5 people **not in an astronomy class** about the misconception, following the examples below. Write down and submit their answers AND THEIR explanations. If the people you interview ask you a question you can’t answer, share it with the class next time we meet or write it on your paper. I urge you to explain the real situation to the people you interview who get it wrong, but that’s optional.
  - Common Misconception question #1: For the misconception on page 7, ask “Is the following statement reasonable or correct: ‘It will be light-years before anyone builds a better product?’”
  - Common Misconception question #2: For the misconception on page 13, ask “Which is bigger, the solar system, the galaxy, or are they the same?”
  - GENERAL DIRECTIONS: In general, when you are assigned a Common Misconception, you will ask 5 people a question to determine if they have the common misconception or if they understand things correctly.
- **Why I assign these problems.** These assignments ask you to interview people in “the real world” about their knowledge of astronomy. This helps you understand (and hopefully appreciate) how much you have learned compared to those less educated. It also gives you a chance to learn using one of the best known techniques that exists: teaching something to other people who don’t understand.

**How to answer a “Test Your Understanding,” “Quick Quiz,” or any question that offers a choice of answers.**

- For each question, pick your answer and **write at least one sentence justifying your choice** and explaining why your choice is the best from the options listed. Read the directions for the “You’re your Understanding” questions because they change from one chapter to the next! Example answer for Chapter 1 question #23 (page 24). ANSWER: Does not make sense because if the Earth is the size of a basketball, some objects would be too far away to fit inside a park.
- **Why I assign these problems.** These assignments are typically multiple choice types of questions, although some of the “choices” are non-conventional. Some questions like these appear on your tests. You are asked to explain your choice because you may incorrectly understand a topic while still picking the right answer. Tests tend to ask questions about the same topics but with slightly different words, or they expand on the topics in the homework. Therefore it is important for you to understand the concept, not just to get the right answers on the homework. I ask for your reasoning behind your choice so I might provide feedback where necessary.
ASTRONOMY TEST REWRITE

INSTRUCTIONS

For up to half of the credit lost per question, you may rewrite any questions that you got wrong, except the ineligible questions listed by the instructor when handing back the tests. (These ineligible questions will also be posted to the web page.) To get credit, you must:

1. Explain BOTH why your answer is incorrect and why the correct answer is correct. Often you can explain both with the same explanation.
2. You should NOT explain why you picked the wrong answer – you should only explain why that answer is not correct, as discussed in #2 above. (I’m not interested in why you got the answer wrong.)
3. Write or type all answers on your own paper, NOT the original test or scantron.
4. Do not write on the scantron form or on the test questions – I will not look at them.

This re-write is due one week after the test is handed back in class, except as noted in the next sentence. You may use the NQA coupon to postpone the rewrite due-date by one week. After that, the test rewrite will not be accepted.

Questions NOT eligible to be re-written will be given during class.

Maximum extra credit per question re-written: ½ the value of the question

You may use any resource available to you to help you determine the correct answers, including other people. However, what you submit must be written in your own words. If you work in a group, you must make sure not to have identical explanations or else you will get no credit for the assignment.

Test rewrites, like all homework, may be submitted by email. Email submissions tend to get more comments, but also tend to be handed back a little later.
NQA COUPONS

Everyone deserves another chance, so here are two “NQA coupons” for you. You may use an NQA coupon if you are unable to turn in a homework assignment on the day it is due. For homework assignments, the coupon must be submitted no later than one class period after the assignment this coupon replaces is due, and you will receive full credit for the homework assignment. You may also use the NQA coupon to postpone the test rewrite due-date by one week. Coupons will not be accepted for anything other than homework assignments or postponing test rewrites.

For once-a-week classes, you will often have two assignments due per week, so you may need to use BOTH coupons if you forget all of your homework for the week if you want full credit for all homework.

Remember there are many ways to get the homework to me on time, even if you don't make it to class. You can ask a classmate to submit it for you (although YOU are held responsible if I don’t get it), you can email it to me, or drop it off early.

You need not cut out the coupon below. You can simply turn in a piece of paper (or email) with your name, the day(s) your class meets, and which assignment you are using the coupon for.

I keep track in my computer of which assignments you have used your coupon for and how many you have used. Unused coupon(s) will automatically be redeemed at the end of the semester if a student has missed an assignment(s).

<table>
<thead>
<tr>
<th>NO QUESTIONS ASKED COUPON #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used by: ______________________</td>
</tr>
<tr>
<td>Used for: ____________________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NO QUESTIONS ASKED COUPON #1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used by: ____________________</td>
</tr>
<tr>
<td>Used for: ____________________</td>
</tr>
</tbody>
</table>