HOMEWORK #3 – Moon Concepts

Due Friday, May 5th  IN CLASS

Answers to the questions must be given in complete sentences (except where indicated), using correct grammar and spelling. Please be as brief and to-the-point as possible (more is not necessarily better).

You are encouraged to explore the web for help but DO NOT COPY DIRECTLY FROM WEBSITES. Links posted on the course website may be particularly helpful in answering some of the homework questions.

Homework assignments must be legible. Handwritten or typed responses are permitted. Make sure that your assignment is stapled!

Grading Summary:

Questions 1: 22 points
Question 2: 12 points
Question 3: 12 points
Question 4: 18 points
Question 5: 36 points
Total: 100 points
1) **Moon Hoax Conspiracy**

Suppose that you are a writer for the New York Times in the 1970s and have been given the assignment of reporting on the “Moon Landing Hoax.” To prep for your assignment, you review the conspiracy theory arguments and also interview a local scientist for evidence against the conspiracy theory claims.

1.1) In the space provided below, list three examples supporting the idea that the Apollo missions might be faked. Then list three examples of evidence that explain and/or contradict those claims. Since most of you probably were not around in the 1970s, you may want to consult the course textbook for help with this question.

**Note: not all information on the internet regarding the moon hoax is considered “scientific”. If you choose to seek alternative sources (such as websites) for supporting information, make sure that the website is scientifically sound and not just of personal opinion. Also, if you do use alternative sources, please cite them with your answer.**

<table>
<thead>
<tr>
<th>Support for Moon Conspiracy Theory</th>
<th>Contradicting Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>1)</td>
<td>1)</td>
</tr>
<tr>
<td>2)</td>
<td>2)</td>
</tr>
<tr>
<td>3)</td>
<td>3)</td>
</tr>
</tbody>
</table>

1.2) Give two additional examples of scientific evidence that support the notion that the Apollo Landings were real.
2) The Lunar Nearside & Farside

List three differences between the farside and nearside of the Moon:

2.1)

2.2)

2.3)

3) Lunar Landing

It is the year 2010 and you are part of a team that is analyzing material brought back from a robotic mission to the Moon. Your team has accumulated a list of observations and materials brought back from the mission:

1. Images taken from the lander have rather low reflectivity.
2. The soil depth is approximately 10cm thick.
3. The basalt brought back is high in iron content.
4. The results of the dating experiments place the basalts to be approximately 3.2 billion years old.

3.1) Did the robot land in the lunar highlands or in a mare basin?

3.2) Give two reasons to support your choice.
4) Lunar Experiments

4.1) The Apollo Program performed a series of scientific experiments on the Moon. What was the full name of this set of experiments?

4.2) List three experiments that were performed on the Moon:

1) 

2) 

3) 

4.3) Through detailed analysis of lunar seismograms, scientists have discovered two primary differences between quakes on Earth and on the Moon. What are these differences?

1) 

2)
5) Crater Density and Lunar Ages

Use the images of lunar craters on the following two pages to answer the questions below.

5.1) Rank inserts A – D from youngest to oldest. Explain your methods in detail and use numbers (i.e. number of craters in each frame) to strengthen your observations. *Hint: can you tell how long it has been raining from looking at a sidewalk?*

5.2) Examine inset C. What can you say about the relative ages of craters 2,3,4,5? (i.e., which is older, younger, etc.)
5.3) What is the process that formed the majority of the surface area of insets A & D?

5.4) Examine crater 6 in the inset D. Compare the surface inside the crater to the surface outside the crater. Are they significantly different? Are they a continuous surface in some places? What can you say about the age of this crater relative to the surrounding surface?
Question 5: Crater density and Lunar Ages

Enlarged versions of these insets appear on the following page.