

Review for Exam 4

1. Review the Summary at the end of each chapter (pp.240-241, 262-263, 293, 324-325, 350-351, 380-381) and Quizzes 8-10.
2. What causes slow surface evolution on the Earth?
3. How do we know the interior structure of the Earth?
4. What is plate tectonics? How does it explain the locations of volcanoes and earthquakes?
5. What causes the Earth's relatively strong magnetic field?
6. How did Earth's atmosphere evolve over time? What important thing happened to cause oxygen to become a major constituent of the Earth's atmosphere?
7. What have humans done to impact Earth's atmosphere?
8. What is albedo?
9. What are some features of the lunar surface?
10. Be able to define the following: terminator, ejecta, ray.
11. What is the Moon's interior probably like?
12. Why does only one side of the moon face us all the time?
13. What happened to the rate of crater formation over time?
14. Summarize the Apollo missions to the Moon.
15. What types of rocks did we find on the Moon?
16. Be able to give a general history of the Moon.
17. What are the four theories of the Moon's origin? Be able to describe each one.
18. What is the Large-Impact Hypothesis? Describe it in detail.
19. What recent discovery may invalidate the Large-Impact Hypothesis?
20. In what ways are Mercury and the Moon similar to each other?
21. What kind of information do we use to determine the relative ages of planetary and lunar surfaces?
22. What recent mission to Mercury has revealed many details about the planet and its history?
23. What are some features of Mercury's surface? How do these features compare to those seen on the Moon?
24. What is the Caloris Basin and how did it form?
25. What are Fossae?
26. What is "3:2 resonance"?
27. What is Mercury's interior probably like?
28. Why is Mercury's magnetic field so weak?
29. Be able to give a general history of Mercury.
30. For each of the planets you should be able to describe each and compare them to each other.
31. How do we determine the composition of a planet's atmosphere?
32. How, in general, are planetary magnetic fields generated? Which planets have strong magnetic fields and which do not?
33. What is unusual about the planet Venus?
34. How did we learn about the surface of the planet Venus? What are some surface features of Venus?
35. What are some major surface features of Mars?
36. What compound was a part of the surface of Mars in the past, but is now not present at the surface? What scientific evidence has been found to support this idea?
37. Which planet is more active geologically, Mars or Venus? What does that tell us about the interiors of the planets?
38. What is composition of Venus' atmosphere? Explain how the composition of its atmosphere affects its surface temperature.
39. What is the composition of Mars' atmosphere? How did it get so thin?
40. Be able to compare the magnetic fields of the Jovian planets. Why are Uranus' and Neptune's magnetic fields unusual?
41. Be able to compare the atmospheres of the Jovian planets. What types of compounds make up the clouds seen in their atmospheres?
42. What is oblateness and what does it tell us about a planet?

43. What are belts and zones? What is belt-zone circulation?
44. How is liquid metallic hydrogen different from ordinary liquid hydrogen?
45. By what processes do we think that the outer planet's acquired ring systems? How old are these ring systems?
46. Why are Saturn's rings so visible whereas Jupiter's are not?
47. How were Uranus' and Neptune's rings discovered?
48. What is the Roche limit?
49. Know enough about each of the following satellites to distinguish them from each other: The Moon, Phobos, Deimos, Callisto, Io, Ganymede, Europa, Titan, Titania, Triton. Which planet(s) do they orbit?
50. How were Uranus, Neptune and Pluto discovered? Be able to describe the discovery and know the persons involved.
51. What are two recent discoveries involving your planets from the Homework Assignment due on November 11th?
52. What is Pluto now considered to be? What group of objects is Pluto and its satellite Charon more closely related to?
53. What are meteors, meteoroids, meteorites, asteroids and comets?
54. What is the source for the material that makes up a meteor shower?
55. What are the major types of meteorites? Which are the most common?
56. What is the origin of meteorites?
57. Where do we find most asteroids?
58. What are Kirkwood's gaps and how do they form?
59. What are Apollo-Amor objects and why should we care about them?
60. What are Trojan asteroids? Where can you find them?
61. What is the origin of asteroids?
62. What is the general composition of a comet?
63. How many tails do comets have? What are they made out of?
64. What is the Oort cloud? How did it probably form? Why is it important to us?
65. What is the Kuiper Belt?
66. What are Plutinos?
67. What are the main pieces of scientific evidence for the Chicxulub impact being responsible for the extinction of the dinosaurs?