

OpenStax Astronomy, Ch.11: WS Problems (Apr-2021)

Review Questions

1. What are the main challenges involved in sending probes to the giant planets?
2. Explain why visual observation of the gas giants is not sufficient to determine their rotation periods, and what evidence was used to deduce the correct periods.
3. What is the consequence of Uranus' spin axis being 98° away from perpendicular to its orbital plane?
4. At the pressures in Jupiter's interior, describe the physical state of the hydrogen found there.
5. Which of the gas giants has the largest icy/rocky core compared to its overall size?
6. In the context of the giant planets and the conditions in their interiors, what is meant by "rock" and "ice"?
7. What is the primary source of Jupiter's internal heat?
8. Describe the interior heat source of Saturn.
9. Which planet has the strongest magnetic field, and hence the largest magnetosphere? What is its source?
10. What are the visible clouds on the four giant planets composed of, and why are they different from each other?
11. Why do the upper levels of Neptune's atmosphere appear blue?
12. How do storms on Jupiter differ from storm systems on Earth?
13. Describe the differences in the chemical makeup of the inner and outer parts of the solar system. What is the relationship between what the planets are made of and the temperature where they formed?
14. How did the giant planets grow to be so large?

