

OpenStax Astronomy, Ch.13: WS Problems (Apr-2021)

Review Questions

1. Why are asteroids and comets important to our understanding of solar system history?
2. Describe the main differences between C-type and S-type asteroids.
3. Compare asteroids of the asteroid belt with Earth-approaching asteroids. What is the main difference between the two groups?
4. Briefly describe NASA's Spaceguard Survey. How many objects have been found in this survey?
5. Who first calculated the orbits of comets based on historical records dating back to antiquity?
6. Describe the nucleus of a typical comet and compare it with an asteroid of similar size.
7. Describe the two types of comet tails and how each are formed.
8. What classification is given to objects such as Pluto and Eris, which are large enough to be round, and whose orbits lie beyond that of Neptune?
9. Describe the origin and eventual fate of the comets we see from Earth.
10. Give brief descriptions of both the Kuiper belt and the Oort cloud.
11. Give at least two reasons today's astronomers are so interested in the discovery of additional Earth-approaching asteroids.
12. Why is it hard to give exact diameters for even the larger objects in the Kuiper belt?
13. If the Oort cloud contains 10^{12} comets, and ten new comets are discovered coming close to the Sun each year, what percentage of the comets have been "used up" since the beginning of the solar system?