

Name _____

Period _____

Video – The Universe: Cosmic Collisions

1. Why do all the members of a collisional family have the same composition?

2. Explain why the Kuiper belt object 2003EL61 is shaped like an elongated football.

3. Why is it believed that 2003EL61 is so bright?

4. Comets are believed to be objects that have been knocked out of the _____.

5. 2003EL61 is _____ times larger than comet Shoemaker-Levy 9 which struck Jupiter in 1994!

6. At the end of the Heavy Bombardment period of the solar system, which ended 3.8 billion years ago, objects that were too small to form planets ended up in two locations:
 - a.

 - b.

over

7. The Baptistina Family of collisional objects from the asteroid belt formed from an object the size of _____ . Some of these have likely hit Earth in the past. One of them may have been responsible for _____ .
8. The impact that happened 65 million years ago in the Yucatan Peninsula released 65 million megatons of energy which is equivalent to 1 Hiroshima bomb exploding per second for _____ years!
9. The extinction of the dinosaurs happened at the boundary of the Cretaceous and Tertiary periods of geologic history. This is also known as the _____ extinction or boundary.
10. Explain why the evidence of shocked quartz at Meteor Crater finally convinced scientists that it was an impact crater.
11. Explain how the presence of iridium at the K-T boundary really convinced scientists that the extinction of the dinosaurs was due to an astronomical event.
12. Residue from the Yucatan Peninsula crater revealed the impactor to be a carbonaceous chondrite, a type of primitive rock much like the asteroids of the Baptistina Family. Why should we be concerned about their orbits?
13. Explain what the Yarkovsky Force is and how it pertains to the Baptistina Family of asteroids.

