

## Activity #6: Solar System Collisions

Please go to the web site: <http://janus.astro.umd.edu/astro/impact/>

You will investigate and compare collisions on Venus, Earth (land only), and Mars. Read the questions below and construct a table to gather the necessary data.

6-1. Investigate collisions with the planets Venus, Earth (land only), and Mars. Determine the maximum-sized rocky object that is destroyed in each planet's atmosphere to two significant figures (e.g. 4.3 meters or 43 kilometers). Keep the velocity constant at 20 km/sec.

6-2. How much energy is released by the largest airbursts on each planet (in Megatons)? How often do these events this happen on each planet?

6-3. What are the diameters and depths of the smallest craters that can be produced on each planet?

6-4. How do the atmospheres compare on Venus, Earth and Mars? How do these differences affect the smallest diameter for a crater on the surface of each?

6-5. Saturn's satellite Titan has an atmosphere about ten times thicker than Earth's. Estimate the smallest impact crater that you would find on its surface.