A Hard Rain's Gonna Fall:
When Solar System Vagabonds Meet the Earth

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Summary

Our Solar System is home to numerous objects, both large and small, that orbit the Sun at various distances. The geologic and biological history of Earth has been intimately associated with collisions from representatives of the Asteroid and Kuiper Belts and the more distant Oort Cloud. For scientific as well as practical purposes, it is useful to find and catalogue objects that are in the Earth's vicinity, especially those bodies whose orbits could or do cross that of the Earth. This paper will discuss Near-Earth asteroid detection systems (A. Hildebrand, pers. comm.) and fireball detection networks – particularly, the infrasound and seismic systems for objects that enter the Earth's atmosphere (Edwards et al., 2007). We are also interested in the physical properties of asteroids and find that there may be some correlation between the strength of meteorites and their colour (Hons, 2004). When the extraterrestrial object or bolide does indeed strike the Earth, an impact structure or crater results. These structures can be large and complex (like a sombrero) or smaller and simple as a bowl. Some of them can hold significant mineral or petroleum resources (Stewart et al., 2002). We will discuss several crater examples including the Steen River structure and the Haughton crater with the attendant NASA Haughton Mars project (Stewart, 2003).

References

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