Meteoritic Collisions and the Extinction of Dinosaurs

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The extinction of the Dinosaurs as a result of meteoritic impact has been discussed many times (e.g. Physics Today, July 24 1987). A 12 km diameter meteorite has been suggested as the initiating cause. This would have left a crater of order 100km in diameter. Here we give some data that enable us to scale to more general impacts.

The crater size produced by impact is proportional to (energy of meteorite)$^{1/3}$. The relation between the size of the meteorite and the mean time between collisions of the earth with such an object (the waiting time) is waiting time $= 10^6 \times$ (diameter in km)^2 .