

Prologue

Space. Our solar system. The sun that wakes us each morning and eight planets locked in orbit around that glowing orb. All spinning and moving together for billions of years through,

Space. Pluto, Haumea, Sedna and one trillion other objects large and small composed of rock, metal, and ice orbit in the doughnut-shaped Kuiper belt rotating in the same direction as the eight planets all moving together through,

Space. The heliosphere, a tear shaped bubble of solar wind that envelopes the total mass of our inner and outer solar system as it moves through,

Space. This bubble of planets, moons, comets, and asteroids travels at the speed of five hundred thousand miles per hour in an orbit around our Milky Way galaxy. A single transit taking more than two hundred million years.

This orchestrated masterpiece of objects has moved and rotated in observable, predictable patterns for untold millennia, until one day when a young scientist saw something he didn't quite understand. He observed something unpredictable. He checked again then, as he adjusted his glasses he spotted an old newspaper article lying on his desk:

Scientists have claimed that a giant meteorite, that exploded in the Earth's atmosphere, may have triggered the extinction of ice age animals such as woolly mammoths.

Researchers found evidence that a large meteorite broke apart in the atmosphere around 12,800 years ago; around the time when mammoths died out. By studying deposits at eighteen archaeological sites around the world, these researchers found tiny spheres of carbon they say are characteristic of multiple impacts and midair explosions from meteorite fragments. They concluded that the spheres were formed by the melting of sediment at temperatures of more than 2,200 degrees Celsius, caused by the heat and shock waves created by an "extraterrestrial object" passing through the atmosphere. Their study, which is published in the journal *Proceedings of the National Academy of Sciences*, estimates that ten million tons of these "spherules" were thrown over an area of more than nineteen million square miles by meteorite fragmentation.

Besides large animals dying out, around the time of the impact, scientists also claim that there is evidence for major human cultural changes. Professor Kenneth Tankersley, an anthropologist and geologist at the University of Cincinnati, who took part in the study, said the changes appeared to have happened "within a lifetime."

"This likely caused climate change and forced this scenario. You can move, downsize, or you can go extinct. Humans at the time were just as resourceful and intelligent as we are today. With mammoth off the dinner table, humans were forced to adapt, which they did to great success. It's a reminder of how fragile we are. Imagine an explosion that happened today that went across four continents.

"The human species would go on. But it would be different. It would be a game changer."

Published in The Telegraph May 21, 2013

He was well aware that asteroids have impacted Earth many times throughout history, sometimes with catastrophic consequences, but what he observed was not a single asteroid.

His body tensed. His jaw clenched. *Panic is not an appropriate response*, he rebuked himself. He adjusted his black rimmed glasses again and straightened the collar of his white button down shirt. What he observed must be verified. If confirmed, he had very bad news for planet Earth. Who could he tell? How does one prepare?