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Meteors Like Chelyabinsk's Are More Frequent Than Previously Thought

By The Moscow Times

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Studies of the meteorite that exploded over Chelyabinsk in February, leaving over 1,200 people injured by searing heat and flying shards of glass, have suggsted that such incidents are both more destructive and more common than previously believed.

One group of scientists conducted a global survey of airbursts — or fireballs produced when meteoroids explode in the atmosphere with the force of a nuclear bomb — and found that the number of smaller asteroids that regularly enter Earth's atmosphere could be ten times greater than previously estimated.

This would mean that asteroids tens of meters wide are likely to strike Earth once every 10 to 20 years, the team said in an article to be published Wednesday in the science journal Nature.

What's more, recent research has shown that the shock waves set off by these airbursts are

substantially more damaging than was previously believed.

The Chelyabinsk meteorite, which was 20 meters in diameter, hurtled into the atmosphere at a speed of 40,000 miles per hour and released the energy equivalent to 500,000 tons of TNT.

These meteorites are all the more worrisome for being essentially invisible to modern science.

Scientists know the locations of about 95 percent of nearby asteroids with a diameter of at least 1 kilometer, a collision with just one of which could spell the end of human civilization. However, only 0.5 percent of asteroids that are 40 meters to 60 meters in diameter, two to three times larger than the Chelyabinsk one, have been found, former NASA space shuttle astronaut Edward Lu told The New York Times.

Another study to be published in the same issue of Nature found that the Chelyabinsk meteorite was likely once part of another, two-kilometer-wide asteroid eloquently named 86039.

The study also showed that the meteorite broke into pieces at an altitude between 30 and 45 kilometers, thereby preventing what could have been more serious destruction down below.

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