

Toll from Russia meteor strike 'unprecedented'

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But the impact has no connection with a flyby by an asteroid later Friday, according to Robert Massey, deputy executive secretary of Britain's Royal Astronomical Society (RAS).

"I am scratching my head to think of anything in recorded history when that number of people have been indirectly injured by an object like this... it's very, very rare to have human casualties."

Small space debris burns up harmlessly in the sky as it enters the atmosphere, appearing in streaks of light called meteors that can often be seen on a clear night, he said.

But, very rarely, larger objects survive the early stage of descent before exploding in the lower atmosphere, causing a shockwave, which is what happened on Friday, he said.

According to Russia's ministry of emergencies, almost 500 people were injured by flying glass as the windows were blown in.

Very much bigger objects—such as the rock that notoriously ended the reign of the dinosaurs some 65 million years ago—can smash into the Earth, delivering the energy of an arsenal of nuclear weapons, but these again are even rarer.

Massey, basing his estimate on news reports, said Friday's object was in all probability less than 10 metres (30 feet) across before it collided with Earth.

"It's unprecedented to have something like this happen over an inhabited area and cause damage in this way," he said in a phone interview from London.

"Events like this are not common—there were several large falls in the

20th century, at least two of which were over Siberia—but two-thirds of the Earth is ocean, so we tend to miss them."

Massey said there was no need for alarm over the event.

He stressed he saw "absolutely no connection" between the event in the Chelyabinsk region and asteroid 2012 DA 14, which was to skim the Earth on Friday at a distance of around 17,200 miles (27,700 kilometres), the closest known flyby by a space rock.

"It happened 12 hours earlier, and that amounts to half a million kilometres (300,000 miles) of travel, (and) it seems to have been travelling in a different direction—east-west, whereas the asteroid tonight will be travelling south to north," said Massey.

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