

Asteroid explosion over Indonesia raises fears about Earth's defences

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An asteroid that exploded in the Earth's atmosphere with the energy of three Hiroshima bombs this month has reignited fears about our planet's defences against space impacts.

By Tom Chivers Published: 10:23AM GMT 27 Oct 2009

The asteroid was around 20 meters across and hit the Earth's atmosphere at 45,000mph Photo: GETTY IMAGES

On 8 October, the rock crashed into the atmosphere above South Sulawesi, [Indonesia](#). The blast was heard by monitoring stations 10,000 miles away, according to a report by scientists at the [University of Western Ontario](#).

Scientists are concerned that it was not spotted by any telescopes, and that had it been larger it could have caused a disaster.

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The [asteroid](#), estimated to have been around 10 metres (30ft) across, hit the atmosphere at an estimated 45,000mph. The sudden deceleration caused it to heat up rapidly and explode with the force of 50,000 tons of TNT.

Luckily, due to the height of the explosion – estimated at between 15 and 20 km (nine to 12 miles) above sea level – no damage was caused on the ground.

However, if the object had been slightly larger – 20 to 30 metres (60 to 90ft) across – it could easily have caused extensive damage and loss of life, say researchers.

Very few objects smaller than 100 meters (300ft) across have been spotted and catalogued by astronomers.

Tim Spahr, director of the [Minor Planet Center](#) in Cambridge, Massachusetts, warned that it was inevitable that minor asteroids would go unnoticed. He said: "If you want to find the smallest objects you have to build more, larger telescopes. "A survey that finds all of the 20-metre objects will cost probably multiple billions of dollars."

The fireball was spotted by locals in Indonesia, and a [YouTube video taken that day](#) "appears to show a large dust cloud consistent with a bright, daylight fireball", according to the Ontario researchers.

An asteroid or comet fragment around 60 meters across is believed to have been behind the [Tunguska Event](#), a powerful explosion that took place over Russia in 1908. The blast has been estimated at equivalent to 10-15 million tons of TNT – enough to destroy a large city.

The [White House](#) is to develop a policy on the space object impact threat by October next year.