

# NASA scrambles for better asteroid detection

February 18 2013, by Jean-Louis Santini

---



A man in Moscow looks at a computer screen displaying a picture reportedly taken in Chelyabinsk on February 15, 2013, showing the trail of a meteorite above a residential area of the city. NASA, universities and private groups in the US are working on asteroid warning systems that can detect objects from space like the one that struck Russia last week with a blinding flash and mighty boom.

NASA, universities and private groups in the US are working on asteroid warning systems that can detect objects from space like the one that struck Russia last week with a blinding flash and mighty boom.

But the [US space agency](#) reiterated that events like the one in the Urals, which shattered windows and injured nearly 1,000 people, are rare.

"We would expect an event of this magnitude to occur once every 100 years on average," said Paul Chodas of [NASA](#)'s Near-Earth Object Program Office at the Jet Propulsion Laboratory in Pasadena, California.

NASA estimates that before entering the Earth's atmosphere above Russia, the asteroid measured 17 meters (56 feet) in diameter and weighed 10 tons.

Fragments of the asteroid caused an explosion equivalent to 500,000 tons of TNT when they hit.

The same day, a 45-meter in diameter asteroid known as 2012 14 whizzed harmlessly past the Earth, its passage overshadowed by the bright arc drawn across the Russian sky that same day.

But had it hit ground, 2012 DA14 could have obliterated a large city.

Ten years ago, NASA would not have been able to detect 2012 DA14, said Lindsey Johnson, near earth object (NEO) project manager at NASA said recently.

But he said NASA has made progress on learning how to detect small asteroids.

Johnson said there are many of these objects flying around near the Earth—say, half a million—and they are hard to track because of their small size.

In line with a goal set by Congress in 1998, NASA has already

discovered and catalogued around 95 percent of the asteroids of a kilometer or more in diameter that are in the Earth's orbit around the sun and capable of causing mega-destruction.

The NEO program at NASA currently detects and tracks Earth-approaching asteroids and comets with land-based and orbiting telescopes. Scientists estimate their mass and orbit to gauge whether they pose a danger.

With this system, the [Arecibo radio telescope](#) in Puerto Rico, which has an antenna 305 meters in diameter, can observe with great sensitivity a third of the night sky and detect asteroids that are on the large side.

All asteroid observations made anywhere in the world by telescopes, even by amateur star gazers, must be passed on to the Minor Planet Center, which is financed by NASA and run by the Smithsonian Astrophysical Observatory for the Paris-based International Astronomical Union.

But in times of tight budgets like these, NASA is trying to develop other systems specifically capable of tracking small objects in space.

It is financing to the tune of \$5 million a project at the University of Hawaii called Atlas, or [Asteroid](#) Terrestrial-Impact Alert System.

Researchers say ATLAS, which will monitor the entire visible sky every night, will be able to detect objects 45 meters (yards) in diameter a week before they hit our planet.

For those measuring 150 meters (yards) in diameter, the system—which could be operational in late 2015—will give a three week heads up.

The goal is to find the objects and give enough advance warning for

measures to be taken to protect people, said John Tonry, the principal investigator at ATLAS.

The system has enough sensitivity to detect a match flame in New York City when viewed from San Francisco, for instance.

"That's enough time to evacuate the area of people, take measures to protect buildings and other infrastructures and be alert to a tsunami danger generated by ocean impacts," according to the ATLAS website.

But NASA's efforts are deemed insufficient by former agency astronauts and scientists who last year launched a project designed to finance, build and launch the first private space telescope to track asteroids and protect humanity.

The foundation called B612 is trying to raise \$450 million to build and deploy a space telescope that would be called Sentinel and placed in orbit around the sun, at a distance of 273 million kilometers from the Earth to detect most objects that are otherwise not visible.

(c) 2013 AFP

Citation: NASA scrambles for better asteroid detection (2013, February 18) retrieved 27 April 2024 from <https://phys.org/news/2013-02-nasa-scrambles-asteroid.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--