

2 December 2008

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World 'must tackle space threat'

By Julian Siddle

Science reporter, BBC News



Asteroid Gaspra taken by the Galileo spacecraft

Scientists say asteroids can be deflected to stop them hitting the Earth

The international community must work together to tackle the threat of asteroids colliding with Earth, a leading UN scientist says.

Professor Richard Crowther's comments come as a group of space experts called for a co-ordinated science-led response to the asteroid threat.

The Association of Space Explorers (ASE) says missions to intercept asteroids will need global approval.

The UN will meet in February to discuss the issue.

In the ASE report, the group of scientists and former astronauts point to the historical record to highlight the dangers of asteroids; an impact 65 million years ago may have wiped out the dinosaurs, and the Tunguska impact in 1908 produced a 2,000 sq km fire in Siberia, big enough to engulf a city the size of New York.

They say the next major threatening event could occur in less than 20 years. Asteroid Apophis is due to pass close to the Earth and analyses suggest a one in 45,000 chance of a collision.

It's a single event, potentially causing a large number of casualties
Professor Richard Crowther, chair of the UN Working Group on NEOs

An impact by Apophis would generate the equivalent of a 500 megatonne blast, at least 100 times more powerful than the Siberian event.

Professor Crowther of Britain's Science and Technology Facilities Council (STFC), is the chair of the UN Working Group on Near Earth Objects. He says the threat

needs to be taken seriously.

"The issue is it's a single event, potentially causing a large number of casualties," be told BBC News.

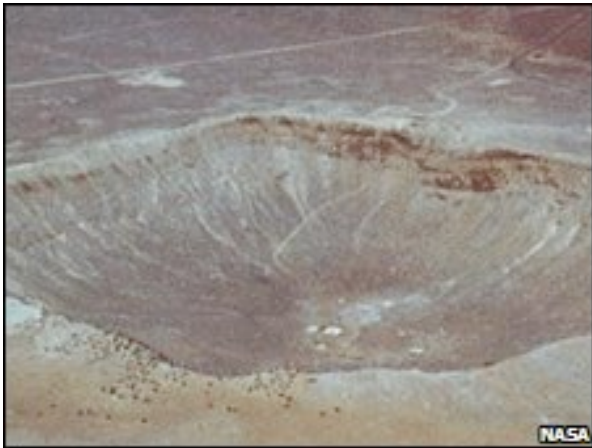
The UN broadly agrees that action is necessary, though what form this should take is still under discussion.

Collision course

Professor Crowther welcomed the ASE report and said it would be discussed by the UN action team tasked with coming up with a plan, when they meet next February.

"A lot of what's in the report is consistent with what we're suggesting anyway, there needs to be effective scientific co-ordination, enough observatory time, and people looking in the right place at the right time."

Impact crater in Arizona



Past space impacts have left huge craters

The document says most asteroids entering the Earth's atmosphere are small and burn up before reaching the surface. But it is the larger ones - perhaps 200m or more across - that would need to be deflected away from a collision course with the Earth.

The researchers propose several ways of doing this, the most extreme methods being to crash a spacecraft into the asteroid to knock it off course, or to set off a nuclear explosion. They say the earlier the threat is dealt with, the less drastic the course of action need be.

Professor Crowther says the natural forces of gravity can be used to deflect asteroids in many situations.

"We can use the natural attraction of a probe to one of the bodies, to slowly pull the object away."

He says if done at sufficient distance from the Earth, the orbit of an asteroid can be

changed slightly to take it away from a collision path.

ASE propose combining scientific monitoring and research with a global political strategy.

Professor Crowther says the scientific consensus is already broadly in place, but political consensus may take longer.

"We have to decide on a political framework, who's going to act and under what authority. That's clearly a role for the UN within the next two to three years. The key is to get it done before its needed, when people are much more reasonable, rational and objective."