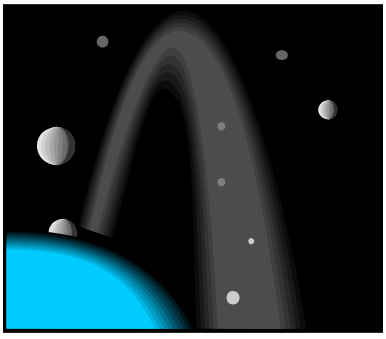
DIRECTIONS: **Read the article "Near-Miss Asteroid Could Have Wiped Out Greater London Area," and answer numbers 20 through 24.**



Near-Miss Asteroid Could Have Wiped Out Greater London Area

by Charles Arthur

An asteroid measuring nearly three miles across squeezed past Earth by the astronomical equivalent of a hair's breadth yesterday.

The flypast, by the asteroid Toutatis, was the closest it will make this century, and one of the nearest by any "near-Earth object" for the next 180 years. But astronomers warned that there are potentially thousands of much smaller objects that could devastate an area as large as the M25 region which are not being picked up because governments are failing to fund the detection of one of the greatest threats to the planet.

Toutatis is one of thousands of asteroids left over from the formation of the solar system six billion years ago which could still crash into the Earth. Had Toutatis hit the Earth, it would have had the explosive impact of a one million megaton bomb, many times the total nuclear arsenal of the superpowers, and destroyed all life on the planet. But its closeness is relative - it remained a little less than a million miles away.

But even smaller objects, as small as 100 to 200 meters across, could wipe out an area the size of London, warned Kevin Yates of the Near-Earth Objects group at the British National Space Centre. "NASA has calculated that such an object will hit the Earth about once every 700 to 1,000 years," he said yesterday. "Such an object did hit the Earth in 1908, over Tunguska in Siberia, which devastated two thousand square kilometers of forest."

Dr Alan Fitzsimmons, an astronomer at Queen's University Belfast who wrote a report in 2000 detailing what the government should do to increase detection of such "near earth objects", said: "The search programs now under way use relatively small telescopes, which means they can only see fairly bright objects that reflect sunlight; that means they can only detect things larger than about 200 meters across. Most of the

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effort, though, is being focused on objects larger than one kilometer." Toutatis posed little risk. The peculiar-shaped asteroid - described by one astronomer as looking like a "cosmic yam" - whizzed past at roughly four times the distance between the Earth and the Moon, precisely as astronomers had expected.

"Toutatis isn't any risk to the Earth," said Dr Yates. "It has an extremely well-known orbit, and has been observed with radio telescopes, which gives a pretty accurate prediction of where it's going." Named after an obscure Celtic and Gallic god - whose name was then picked by the writers of the Asterix cartoon as an expletive - the asteroid measures 4.6 kilometers (2.9 miles) by 2.29 kilometers by 1.92 kilometers.

Its next close approach to the Earth will not come before 2100. The next close approach to the Earth by an identified near-Earth object will be on January 26, 2015 - when an object called 2004 BL86, discovered only this year, will pass just 800,000 miles from the Earth.

DIRECTIONS: Based on the article "Near-Miss Asteroid Could Have Wiped Out Greater London Area," answer numbers 20 through 24.

20. What does the author mean by saying, "But its closeness was relative – it remained a little less than a million miles away."?

(A) The asteroid has an unpredictable orbit; therefore, it could have entered the earth's orbit.

(B) Scientist believe that this asteroid may come closer to the earth on the next orbit.

(C) The asteroid was too distant to be considered a threat to the earth.

(D) Astronomers consider this asteroid to be a "near –Earth object."

21. With which statement would the author most likely agree?

(A) More scientific efforts must focus on objects larger than one kilometer.

(B) Astronomers are precise in predicting the asteroids that are near earth.

(C) The search programs use relatively small telescopes to detect asteroids.

(D) Governments should fund the detection of smaller asteroids in the solar system.

22. What would have been the effect if Toutatis had hit the earth near London, England?

(A) It would have remained close to earth and posed a threat for several years.

(B) Two thousand square kilometers of forest would have burned all over the earth.

(C) It would have had the impact of nuclear arsenal destroying all life on earth.

(D) The peculiar shaped asteroid would have devastated an area the size of London.

23. What was the author's purpose in writing this article?

(A) to show the importance of detecting smaller asteroids

(B) to explain the path that asteroids follow in space

(C) to convince the reader that Earth is in danger

(D) to describe the history of the asteroid Toutatis

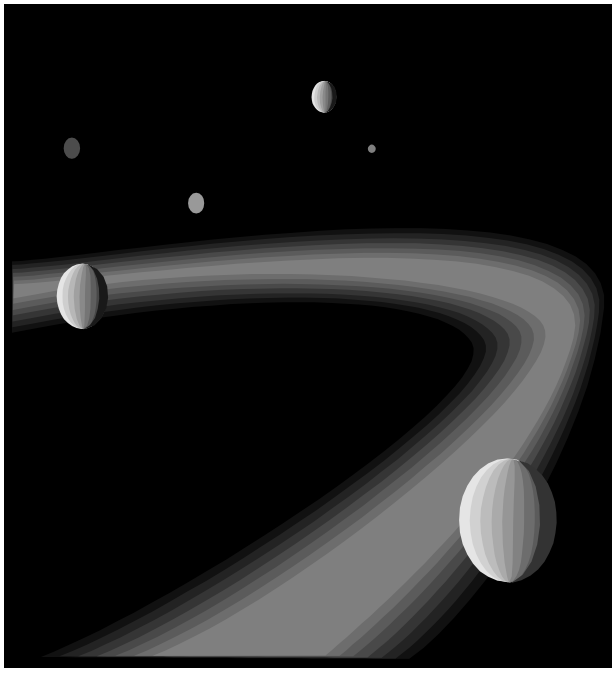
24. People who read this article will learn that

(A) radio telescopes need to be improved to provide accurate information concerning the path of asteroids.

(B) the detection of both large and small asteroids can alert scientists of risks to the planet.

(C) an asteroid larger than three miles across would never enter the earth's atmosphere.

(D) the prediction of asteroids hitting the earth is an exact science.



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