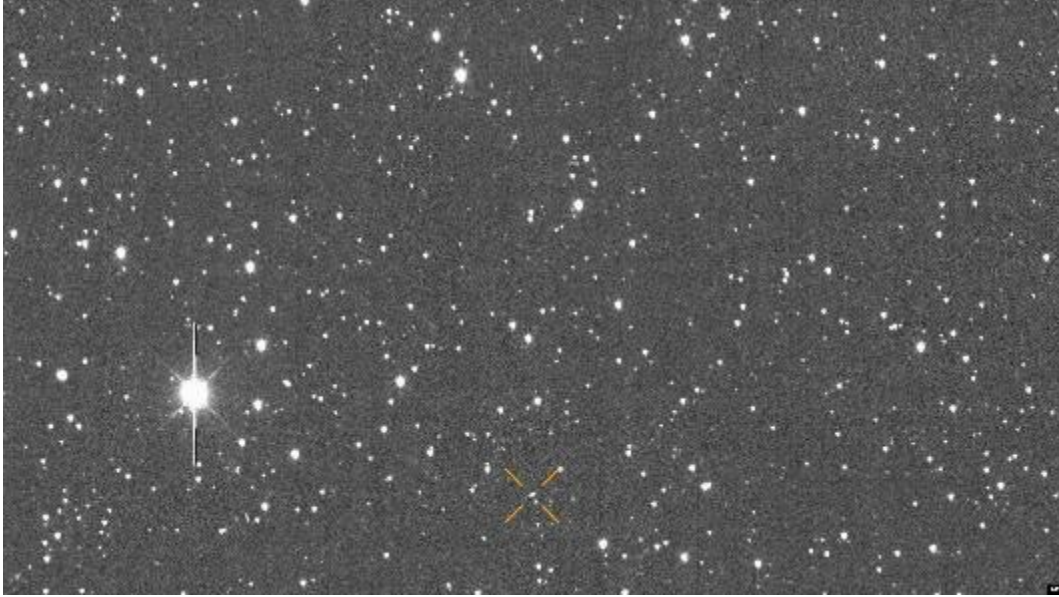


Space Agencies Report Increased Risk of Space Rock Striking Earth in 2032

2032年、地球に小惑星が衝突するかもしれない！？ そんな衝撃的なニュースがNASAから発表されました。小惑星の名前は「2024 YR4」。もしも小惑星が地球に衝突したら、どうなると思いますか？ 衝突の確率は低いと言われていますが...それでも心配ですね。本文では「deflect」という単語が使われています。これは「そらす」「方向を変える」という意味で、この記事では、小惑星の軌道をそらすことを「deflect」と表現しています。実際に小惑星が地球に衝突する可能性はどのくらいあるのか、もしものシナリオについて講師と議論してみましょう。



1. Article

Read the following article aloud.

Scientists say the threat of a large space rock striking the Earth in 2032 has increased.

Recent calculations suggest there is a small chance - perhaps around 1 to 3 percent - the space rock 2024 YR4 will hit Earth in 2032. This also means there is around a 97 to 99 percent chance it will safely pass our planet in that year. The **odds** of a **strike** will likely continue to go up and down as the asteroid's path around the sun is better understood.

And scientists say there is a good chance the risk will drop to zero.

NASA and the European Space Agency's Webb Space Telescope will observe this near-Earth asteroid in March before the object becomes impossible to see. Once that happens, scientists will have to wait until 2028 when it passes our way again.

What is an asteroid?

Asteroids are space rocks orbiting the sun.

Asteroids are much smaller than planets. Scientists believe they are the leftovers from the solar system's formation 4.6 billion years ago.

There are millions of asteroids orbiting the sun between Mars and Jupiter. That area is known as the main asteroid belt. The asteroids sometimes get pushed out of the belt and can end up elsewhere.

How do scientists follow worrisome asteroids?

A telescope in Chile discovered the asteroid 2024 YR4 in late December. It is estimated to measure between 40 and 90 meters across. NASA said observations by the Webb space telescope should provide a more exact measurement.

At first, NASA and the European Space Agency put the odds of a strike at just over one percent. But later calculations suggested the odds had risen to 2 or even 3 percent. NASA described the likelihood of a strike as "extremely low."

Until scientists have a better understanding of the asteroid's path around the sun, they warned that the odds will continue to change — and quite possibly fall to zero.

"You don't have to be worried about anything. It's a curiosity," said Larry Denneau. He is a software engineer at the University of Hawaii working with ATLAS, a program to identify asteroids that might endanger Earth. That effort first spotted the asteroid. Denneau said, "Don't panic. Let the process play out, and we'll have a for-sure answer."

In 2021, NASA said another possibly worrisome asteroid, Apophis, did not present a risk to Earth. NASA made the announcement after additional telescope observations ruled out any chance of it hitting Earth in 2068.

Should we worry about asteroid 2024 YR4?

Experts say it is too soon to worry about 2024 YR4.

Paul Chodas is director of NASA's Center for Near-Earth Object Studies. Chodas said in an email to the Associated Press, "No one should be concerned that the [impact](#) probability is rising. This is the behavior our team expected."

Chodas added, "To be clear, we expect the impact probability to drop to zero at some point."

Since the asteroid's size and orbit are uncertain, it is unclear where it might hit and what the possible effects would be should it strike Earth. ESA said, if the asteroid is smaller, the effect might be similar to the Tunguska event that flattened thousands of square kilometers of forest in Siberia in 1908. But if the asteroid is larger, close to 100 meters, the effects "would be significantly worse."

Chodas said once the Webb telescope measures the asteroid's size, NASA can predict "how serious an impact this asteroid could produce and how difficult a task it might be to [deflect](#) this asteroid."

NASA already has some experience moving an asteroid. The space agency's DART spacecraft hit a harmless asteroid in 2022. This was the first planetary defense test of its kind, changing the asteroid's [orbit](#) around its larger companion asteroid.

I'm John Russell.

Marcia Dunn reported this story for the Associated Press. John Russell adapted it for VOA Learning English.

2. Key phrases and vocabulary

First repeat after your tutor and then read aloud by yourself.

1. odds (n.) the possibility or chances of something happening

The odds of getting hit by lightning are about one in ten thousand.

2. strike (n.) a hit by a fast-moving object

A missile strike in Lviv destroyed an apartment building.

3. impact (n.) a hit by a fast or heavy object, such as a meteor

About 65 million years ago, the impact of a huge asteroid killed off the dinosaurs.

4. deflect (v.) to move the path of something away from its original direction

The baseball was going to go over the fence, but a light post deflected it.

5. orbit (n.) the path of an object as it goes around a star or a planet

The orbit of Pluto around the Sun is not a circle, and it crosses the orbit of Neptune.

3. Questions

Read the questions aloud and answer them.

1. What is an asteroid? Try to explain in your own words, in simple English, and without looking back at the article.
2. How big a risk is asteroid 2024 YR4? Explain regarding size, odds, and orbit.
3. What was the DART spacecraft, and what was special about it?
4. Do you know about any famous impacts on Earth, such as the Chelyabinsk meteor or the Tunguska event?
5. Do you think JAXA should help NASA and ESA (the European Space Agency) to find and deflect asteroids?