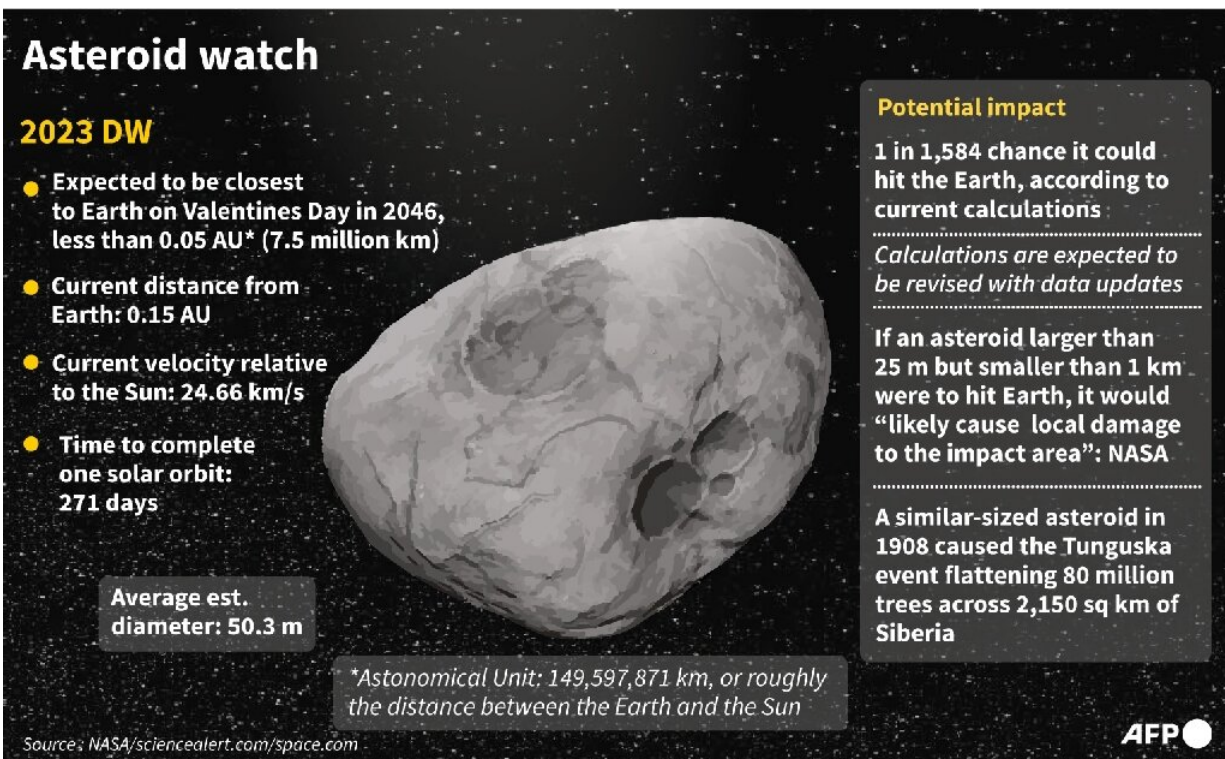


'No need to worry': Odds drop newly-found asteroid will hit Earth

March 14 2023, by Daniel Lawler



Asteroid watch

2023 DW

- Expected to be closest to Earth on Valentines Day in 2046, less than 0.05 AU* (7.5 million km)
- Current distance from Earth: 0.15 AU
- Current velocity relative to the Sun: 24.66 km/s
- Time to complete one solar orbit: 271 days

Average est. diameter: 50.3 m

*Astronomical Unit: 149,597,871 km, or roughly the distance between the Earth and the Sun

Potential impact

1 in 1,584 chance it could hit the Earth, according to current calculations

Calculations are expected to be revised with data updates

If an asteroid larger than 25 m but smaller than 1 km were to hit Earth, it would “likely cause local damage to the impact area”: NASA

A similar-sized asteroid in 1908 caused the Tunguska event flattening 80 million trees across 2,150 sq km of Siberia

Source: [NASA/sciencealert.com/space.com](https://www.nasa.gov/sciencealert.com/space.com)

AFP

Newly discovered asteroid 2023 DW has a one in 1,584 chance of hitting Earth on Valentine's Day 2046, according to the ESA.

The chances have plummeted that a newly-discovered asteroid with the potential to wipe out a city will hit Earth on Valentine's Day 2046, the European Space Agency said on Tuesday.

The asteroid, which is named 2023 DW and is estimated to be around the size of a 50-meter Olympic swimming pool, was first spotted by a small Chilean observatory on February 26.

It swiftly shot to the top of NASA and ESA lists of asteroids that pose a danger to Earth, leading to a raft of alarming news headlines, some warning lovers to cancel their Valentine's plans on February 14, 2046.

Late last month the asteroid was given a one in 847 chance of hitting Earth—but the odds rose to one in 432 on Sunday, according to the ESA's risk list.

However Richard Moissl, the head of the ESA's planetary defense office, told AFP on Tuesday that overnight the probability fell to one in 1,584.

"It will go down now with every observation until it reaches zero in a couple of days at the latest," he said.

"No one needs to be worried about this guy."

NASA on Tuesday lowered its own odds of impact to one in 770, meaning there was a 99.87 percent chance that the asteroid will miss Earth.

"We tend to be a little more conservative, but it definitely appears to now have a downward trend in probability," NASA's planetary defense officer Lindley Johnson told AFP.

He said it was normal for the impact odds of newly discovered asteroids to briefly rise before rapidly falling.

This is because new observations shrink the "uncertainty region" where

the asteroid will travel to on its closest point to Earth, he said.

While the Earth is still inside that uncertainty region, the odds temporarily increase—until further observations exclude Earth and the probability drops down to zero, as is expected to happen with 2023 DW.

What if it does hit Earth?

But what would happen in the increasingly unlikely event that the asteroid does strike Earth?

Davide Farnocchia, a scientist at NASA's Center for Near-Earth Object Studies, said a good comparison was the Tunguska event, in which a similarly-sized asteroid is believed to have exploded in the atmosphere above a sparsely populated area in Siberia in 1908.



An image of Dimorphos from NASA's DART spacecraft taken moments before it slammed into the asteroid last year.

"The resulting explosion flattened trees over an area of about 2,000 square kilometers," Farnocchia said. London covers an area of around 1,600 square kilometers.

Moissl said that an asteroid the size of 2023 DW would create "regionalised destruction" and not have a major effect on the rest of the world.

The asteroid, which is orbiting the Sun, came around nine million kilometers from Earth during its most recent closest approach on

February 18—a week before it was discovered.

If it was to strike Earth in 2046, it would be speeding along at around 15 kilometers (nine miles) a second, according to estimations.

There would be a roughly 70 percent chance it lands in the Pacific Ocean, but the potential strike zone would also include the United States, Australia or Southeast Asia, Moissl said.

Deflection plan

Even if the asteroid is heading our way, the experts emphasized that the world is no longer defenseless against such a threat.

Last year, NASA's DART spacecraft deliberately slammed into the pyramid-sized asteroid Dimorphos, significantly knocking it off course in the first such test of our planetary defenses.

Farnocchia said the "DART mission gives us confidence that such a mission would be successful" against 2023 DW, if required.

With 23 years to prepare, there is "ample time" for such a mission to be planned, Moissl said.

The ESA's Hera mission, scheduled to launch next year to inspect the damage DART had on Dimorphos, could even be repurposed for reconnaissance if necessary, he added.

Such plans would not be considered until the probability of an impact passes one in 100, when it would get the attention of UN-endorsed bodies like the International Asteroid Warning Network and the Space Mission Planning Advisory Group (SMPAG), Moissl said.

The aim of SMPAG is to "have everyone on the same page and avoid what happened in the movie 'Don't Look Up'," in which "stupid stuff" happened because nations did not coordinate with each other, Moissl added.

However such defense mechanisms look unlikely to be required for 2023 DW.

"Everyone should relax, ignore the sensationalist headlines and stories, and watch how this situation plays out," NASA's Johnson said, adding that any threat was likely to "evaporate" soon.

"Nevertheless, the planetary defense community will keep looking up!"

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