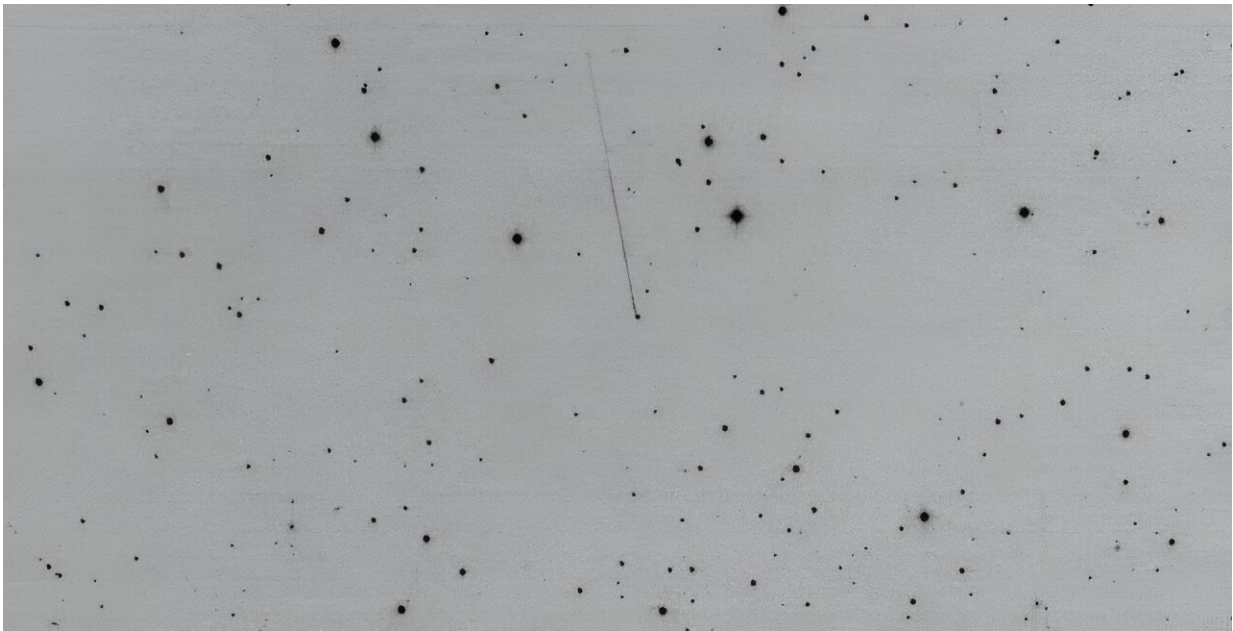


# Asteroid 2024 BX1 spotted three hours before impact

January 25 2024

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The final detection of asteroid 2024 BX1 (initially known as Sar2736 prior to impact) obtained by Luca Buzzi from the Schiaparelli Observatory in Italy. The exposure was started at 00:24:55 UTC on 20 January 2024. The asteroid is travelling from the centre of the image towards the top and begins to fade from view as it enters Earth's shadow. Credit: L. Buzzi, G. V. Schiaparelli Observatory

It was at 22:48 CET on Saturday 20 January when veteran asteroid hunter Sárneczky discovered a new asteroid using the 60 cm Schmidt Telescope at Piskéstető Mountain Station, part of Konkoly Observatory

in Hungary.

He immediately sent his data on the asteroid's trajectory to the Minor Planet Center, but with just three initial observations, it was impossible to know for sure whether it was on a [collision course](#) with Earth.

However, Sárneczky continued tracking the asteroid, and just a few minutes later, he shared four more observations that clearly indicated a 100 % chance of an imminent impact.

Automatic impact monitoring systems around the world, including ESA's "Meerkat," responded to these new data and sprang into action, issuing an alert to [astronomers](#) and asteroid experts.

Sárneczky continued to make and report his observations and was soon joined by others in Europe. More than a dozen observatories turned their eyes towards the incoming object. With their help, it soon became clear that the small asteroid, roughly one meter in size, would impact Earth in less than two hours, approximately 50 km west of Berlin, Germany.

Asteroids of this size strike Earth on average every couple of weeks. They pose no significant danger, and most are never detected. But they can help us understand how many [small asteroids](#) are out there and we can study the fireballs they produce to determine what they are made of—if we catch them on camera.

Thankfully, large asteroids that are many kilometers in diameter are much easier to spot and relatively rare. The vast majority of near-Earth asteroids that would cause devastating damage if they were to impact our planet have already been spotted, and we know of none that will collide with our planet for at least the next one hundred years.

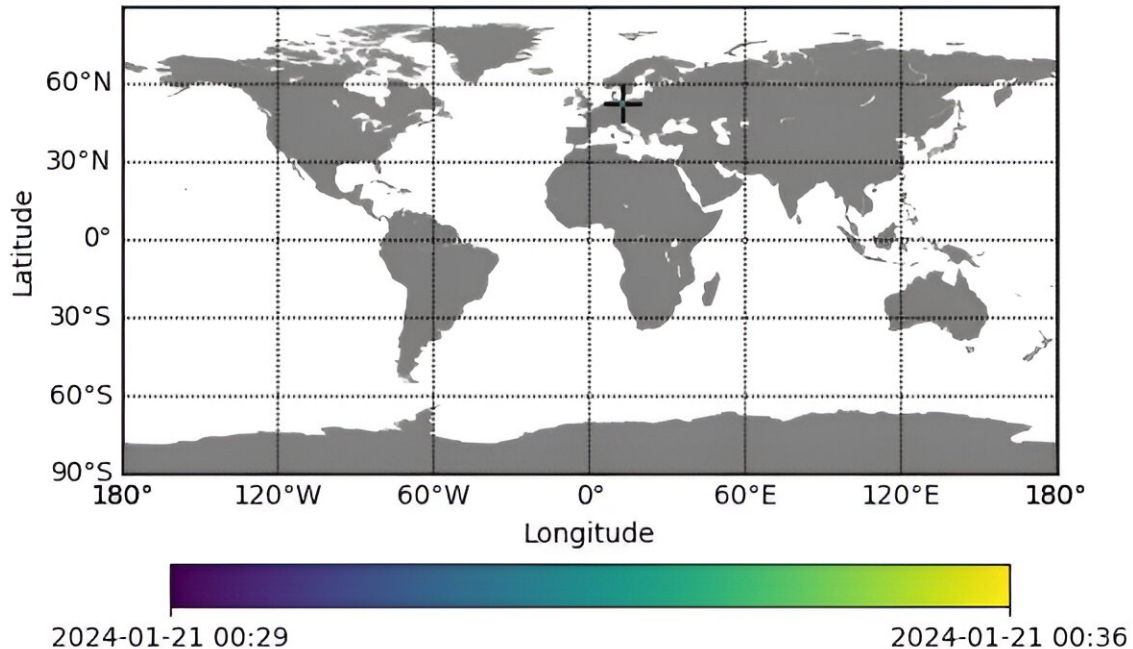
As Saturday night became Sunday morning, astronomers continued to

track asteroid 2024 BX1 until, at 01:25 CET, it entered Earth's shadow and disappeared from view.

Observers held their breath, but they didn't have to wait for long. Just a few minutes later, at 01:32 CET, 2024 BX1 struck Earth's atmosphere and burned an explosive streak through the night sky. Many people in the Berlin area and across central Europe were able to witness the fireball, and a handful of people and automated camera systems even managed to record it.

Only eight asteroids have ever been detected before impact with Earth's atmosphere. The first of these discoveries took place in 2008, and four were detected in just the last two years. As humankind's ability to detect smaller space objects continues to improve, this number is likely to rise exponentially in the coming years.

## Sar2736 Impact plot: 14 obs, 1.0 h arc length



First observation: 2024-01-20 21:48:27, Last observation: 2024-01-20 22:48:48,  
 Number of observations: 14,  
 Median Longitude: 12.76deg, Median Latitude: 52.42deg

Predicted impact location and time computed by ESA's imminent impactor alert system "Meerkat" following the first 14 observations of the object Sar2736 (later designated asteroid 2024 BX1). Meerkat updates assessments each time it receives new observations. Credit: ESA, [CC BY-SA 3.0 IGO](https://creativecommons.org/licenses/by-sa/3.0/)

During the three hours between detection and impact, around 180 observations were submitted to the Minor Planet Center, including those of ESA's Near-Earth Object Coordination Center taken from Tenerife, Spain.

Thanks to the rapid response and information sharing from Earth's [asteroid](#) and fireball communities, many people were able to see and

record this spectacular sight, despite it taking place with just hours' notice and in the middle of the night.

The hunt is now on for any potential meteorites that survived the fiery journey through the atmosphere and made it to the ground.

Provided by European Space Agency

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