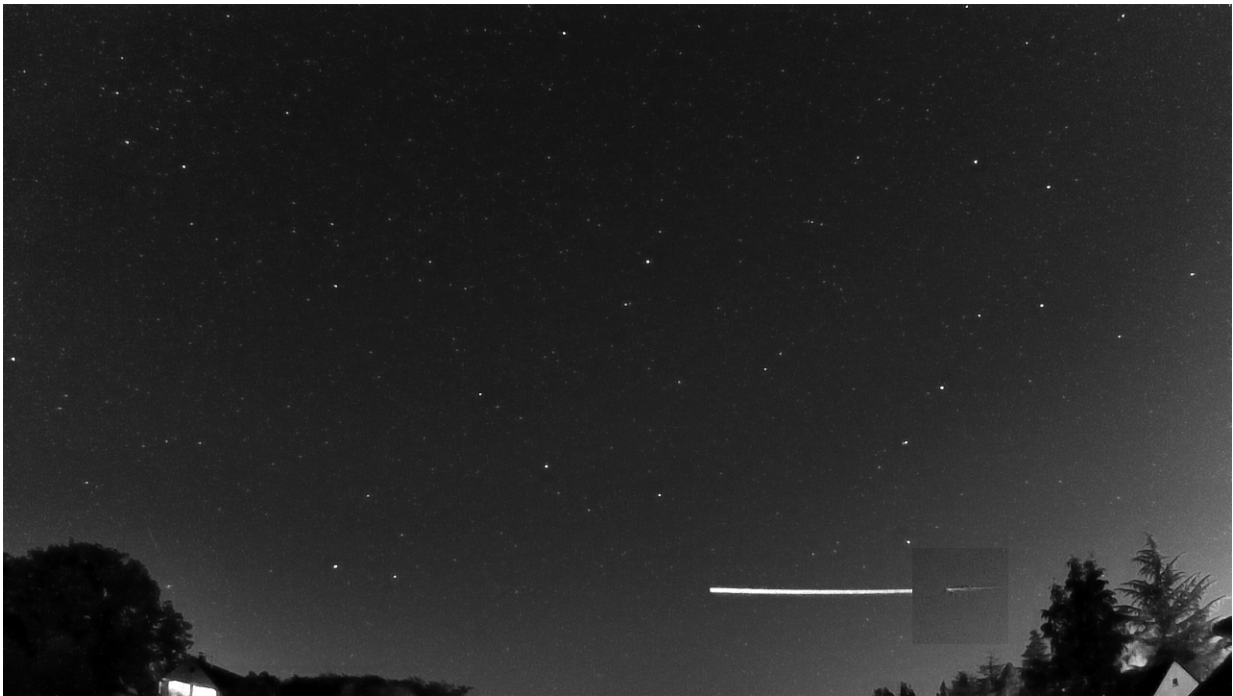


Video shows a meteoroid skipping off Earth's atmosphere

September 29 2020, by Nancy Atkinson



Credit: Global Meteor Network

Here's something we don't see very often: an Earth-grazing meteoroid.

On September 22, 2020, a small space rock skipped through Earth's atmosphere and bounced back into space. The meteoroid, spotted by a camera from the Global Meteor Network, was seen in the skies above Northern Germany and the Netherlands. It came in as low as 91 km (56

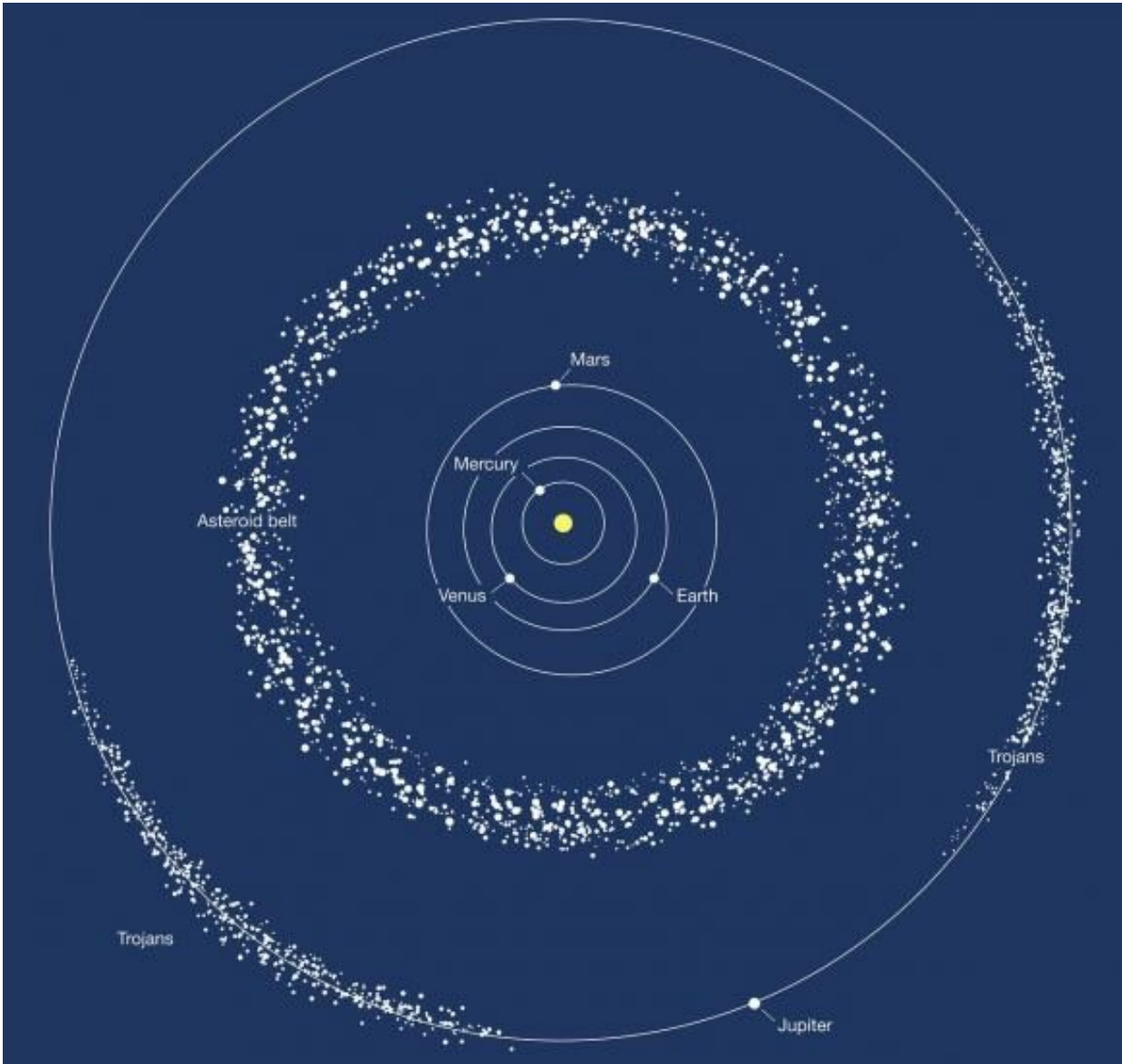
miles) in altitude—far below any [orbiting satellites](#)—before it skipping back into space.

Dennis Vida, a physics postdoc from Western University in Ontario, Canada, who leads the GMN, said they traced the rock to a Jupiter-family orbit, but a search of potential parent bodies found no conclusive matches.

(1/2) An earthgrazer above N Germany and the Netherlands was observed by 8 [#globalmeteornetwork](#) cameras on Sept 22, 03:53:35 UTC. It entered the atmosphere at 34.1 km/s, reached the lowest altitude of ~91 km and bounced back into space! [@westernuScience](#) [@IMOMeteors](#) [@amsmeteors](#)
pic.twitter.com/5EgRivdcsu

— Denis Vida (@meteordoc) [September 22, 2020](#)

As [ESA explains](#), a meteoroid is typically a fragment of a comet or asteroid that becomes a meteor—a [bright light](#) streaking through the sky—when it enters the atmosphere. Most of them disintegrate, possibly with pieces reaching the ground as meteorites.



This image depicts the two areas where most of the asteroids in the solar system are found: the asteroid belt between Mars and Jupiter, and the trojans, two groups of asteroids moving ahead of and following Jupiter in its orbit around the sun.

Scientists estimate that Earth-grazing meteoroids only occur just a handful of times per year. But every day, hundreds of tons of small

interplanetary objects enter Earth's atmosphere. The most common effect that these small objects produce when interacting with Earth's atmosphere are meteors—commonly called shooting stars. A small percentage of the largest rocks reach the ground as meteorites.

No estimate on the size of the Earth-grazer from September 22, but it was likely fairly small. And while tens of thousands of meteorites have been found on Earth, only about 40 can be traced back to a parent asteroid or asteroidal source.

For a rock to "bounce" off Earth's atmosphere, it has to enter the atmosphere at a fairly shallow angle. And like a [rock](#) skipping off a lake, the meteoroid also briefly enters the [atmosphere](#) before exiting again.

The [Global Meteor Network](#) — whose tagline is "No Meteor Unobserved"—is working toward covering the globe with meteor cameras in order to provide the public with real-time alerts, as well as building a picture of the meteoroid environment around Earth.

"The network is basically a decentralized [scientific instrument](#) made up of [amateur astronomers](#) and citizen scientists around the planet, each with their own camera systems," said Vida, who founded the initiative. "We make all data such as [meteoroid](#) trajectories and orbits available to the public and [scientific community](#), with the goal of observing rare meteor shower outbursts and increasing the number of observed meteorite falls and helping to understand delivery mechanisms of meteorites to Earth."

Provided by Universe Today

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