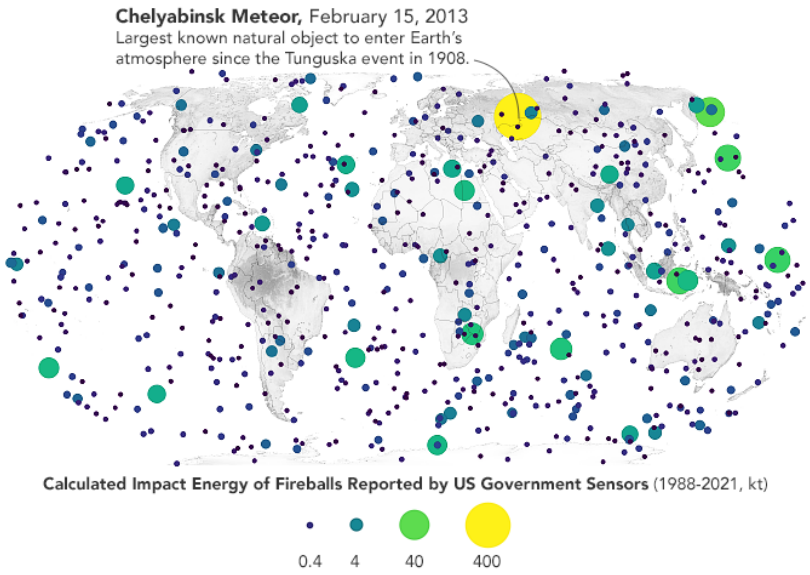
The whole scene of meteorites hitting the Earth during the past 33 years, why can't we feel it?

Recently, NASA's Center for Near-Earth Objects (CNEOS) Jet Propulsion Laboratory released a map that collects data on asteroids and meteorites that have hit Earth over the past 33 years. (from 1988 to 2021).

Specifically, the world map displays dots in 4 different sizes and colors, corresponding to the kinetic energy of each asteroid, the meteorite hits the atmosphere and then burns up due to the force of friction. The scientists used sensors for kinetic energy produced by the fireball, sound waves and energy at other wavelengths to determine its initial size before it entered Earth's atmosphere.



The use of such calculations helped scientists identify the fireball-shaped meteor that fell to Chelyabinsk, Russia on February 15, 2013 with a width of 19 meters and was the largest meteorite shown on Earth. map (yellow dot).

This fireball exploded right over the Ural Mountains, causing a shock wave that broke windows, damaged buildings, and injured about 1,600 people. The meteorite broke apart as it entered the atmosphere, scattering the debris and creating a shock wave estimated to be as strong as the 20 atomic bombs dropped on Hiroshima in 1945. The second largest group of fireballs. shown on the map mainly fall around the Pacific Ocean and border countries, such as Fiji and other islands around Asia.

The use of such calculations helped scientists determine that the fireball meteorite that fell to Chelyabinsk, Russia on February 15, 2013 was 19 meters wide.

The US has been hit by smaller meteorites, though not as many as in other parts of the world. However, most meteorites that have entered Earth's atmosphere since 1988 have broken up and fallen into the ocean. That's why people can't feel them.

Paul Chodas, director of CNEOS, once stated: "Many people have witnessed meteor showers, it is because there are many meteors falling to Earth at the same orbit. Every hour, a meteor shower can bring Earth at least 100 large and small meteorites. On the other hand, fireball events like Chelyabinsk are quite rare and can burn up in the sky at any time of the year."

The meteorite broke into pieces as it entered the atmosphere, scattering the debris and creating a shock wave estimated to be as strong as the 20 atomic bombs dropped on Hiroshima. Pictured is one of the meteorites found by humans

The largest meteor shower is the Perseids, which occurs in early August, when 40 to 100 fireballs are seen every hour in the sky from the 11th to the 13th.

NASA photographer Bill Ingalls captured a beautiful image of a meteorite that fell on August 11, from the top of Mount Spruce in West Virginia, USA. A few clouds hovered, reflecting light from distant urban areas.

Photograph of a shooting star taken by photographer Bill Ingalls

Bill Cooke, head of NASA's Meteorite Environment Office, said: "The meteorite in the picture appears to be blue in some places, because it excites oxygen molecules during its impact with the atmosphere." .

He also notes that the Perseids are very special, because there are many bright meteors falling to Earth. Based on data from NASA's network of meteor cameras across the sky that day, it was possible to detect meteors brighter than Jupiter.

Cooke analysis: *"The number of Perseids meteor brighter light in all other meteor shower and 30% brighter than the Geminid meteor shower occurred on January 12/2020".*

The difference between an asteroid, meteorite and other space rocks

Asteroids are a group of small celestial bodies floating in or out of the solar system. Most of them are located between Mars and Jupiter in the Main Belt.

A comet is a body that resembles an asteroid but is not made up of much rock, but mostly ice. It has been described by some experts as a "dirty snowball" because it contains carbon dioxide, methane and frozen water mixed with dust and minerals. Their orbits take them far beyond the solar system.

A meteor or meteor is the line of sight of meteors and meteorites as they enter the Earth's atmosphere. On Earth, the visible paths of these meteors are due to the heat generated by the compressive pressure as they enter the atmosphere.

If any of the above objects fly to Earth, it is called a meteorite. Meteorites and meteorites often originate from asteroids and comets. For example, if Earth passed through the tail of a comet, most of the debris would instantly burn up in the atmosphere and form a meteor shower.