

Meteorite Landings

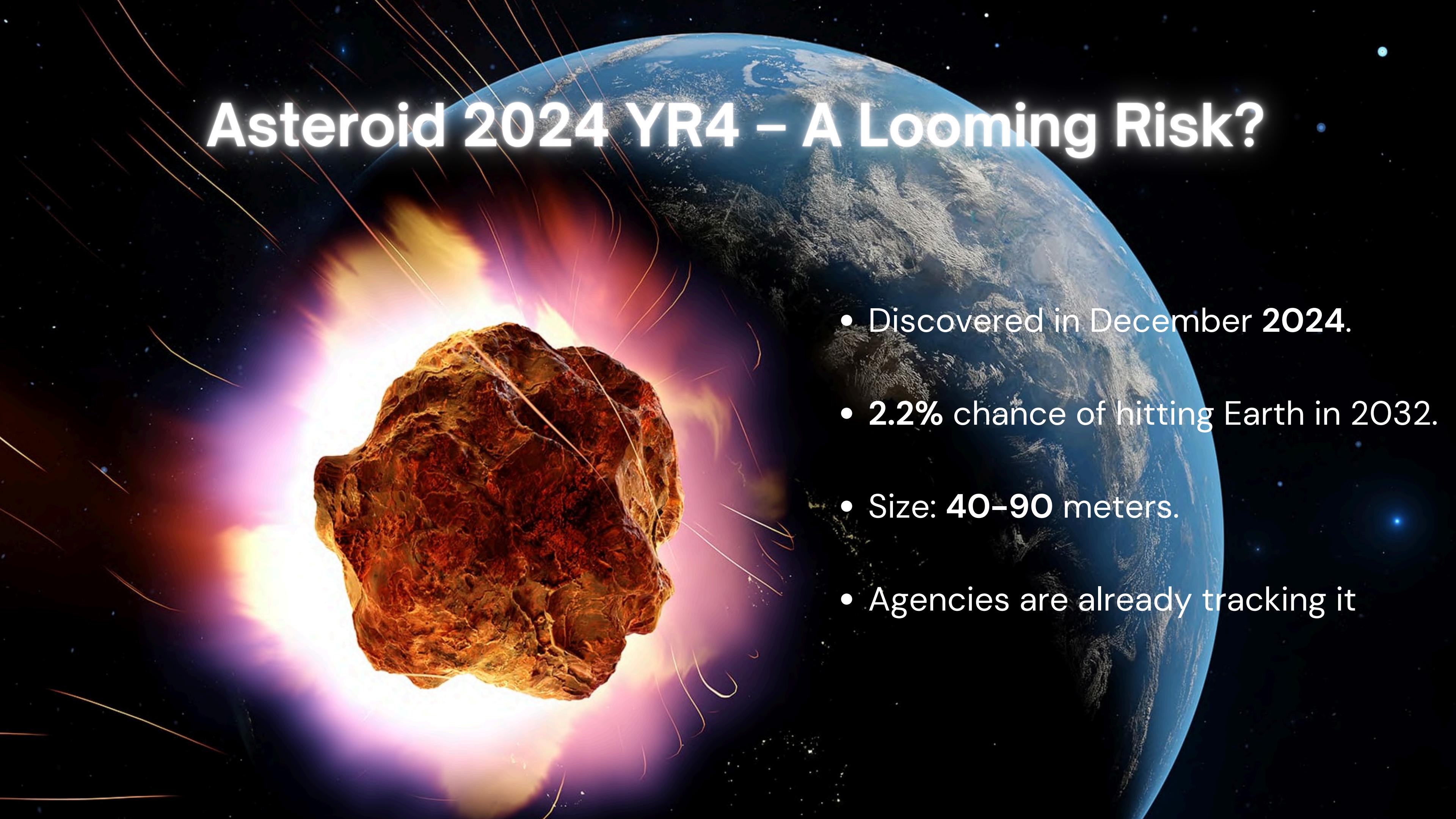
Data Analysis Bootcamp: Project 3

- Carlos Fernando Sánchez Lozano
- Luis Augusto Galíndez
- Miguel Angel Olmos Valderrama
- Valeria Itzel Jimenez Paz



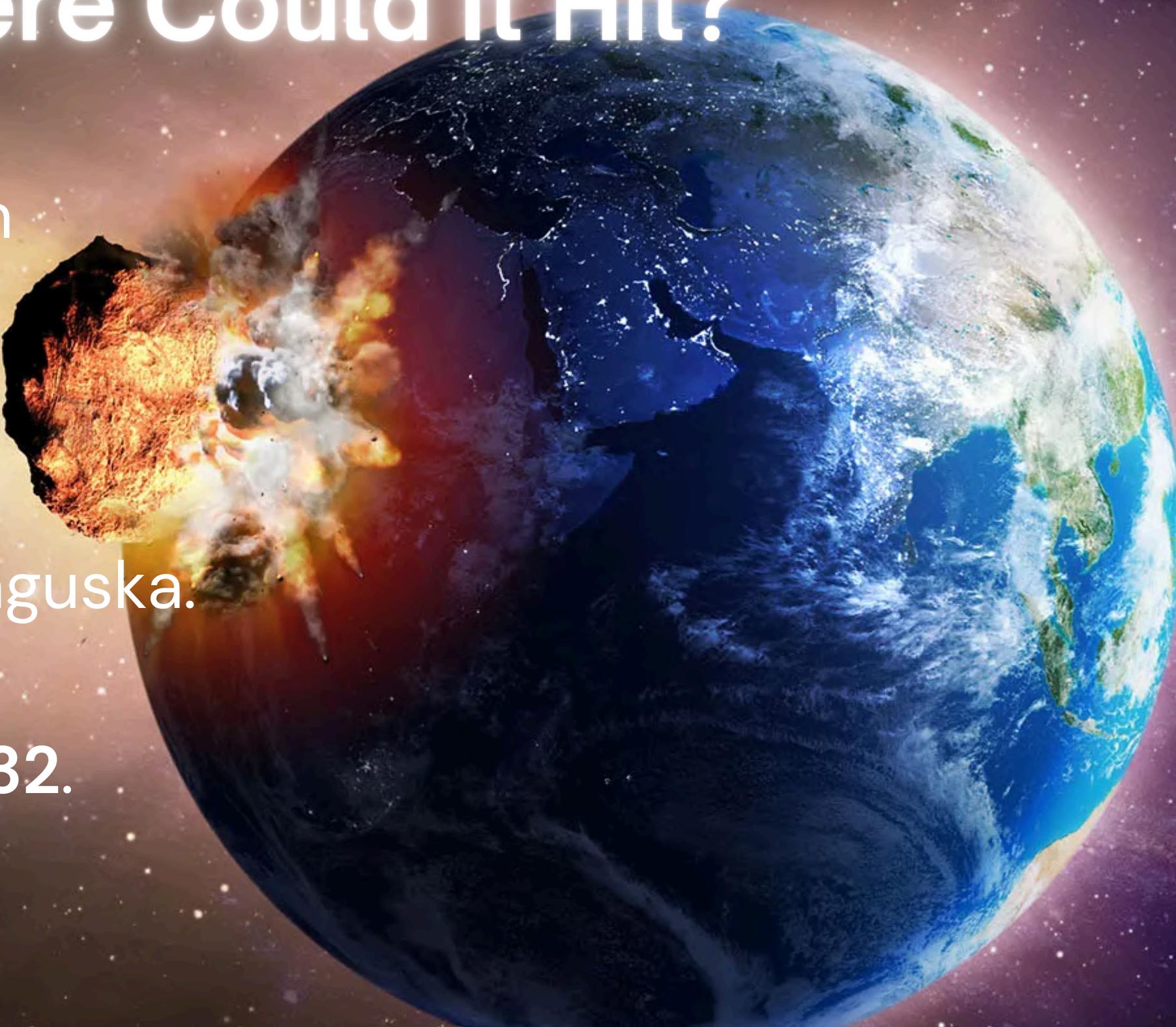
Asteroid 2024 YR4 – A Looming Risk?

- Discovered in December 2024.
- 2.2% chance of hitting Earth in 2032.
- Size: **40–90** meters.
- Agencies are already tracking it



Where Could It Hit?

- **Risk zones:** Pacific, South America, India, Arabian Peninsula.
- Possible damage like Tunguska.
- Updates in 2028 and 2032.



Did you know...?

ARE THERE DIFFERENT NAMES FOR METEORITES?

- **METEOROIDS:** ROCKS ARE STILL IN SPACE
- **METEORS:** THE METEOROIDS ENTER THE ATMOSPHERE. A.K.A. SHOOTING STARS
- **METEORITE:** METEOROID LANDS ON THE EARTH SURFACE.

WHAT ARE THEY MADE OF?

METEOROIDS COME FROM VARIOUS SOURCES—SOME ARE FRAGMENTS FROM ASTEROIDS, OTHERS FROM COMETS, AND A FEW EVEN ORIGINATE FROM THE MOON OR OTHER PLANETS! THEY CAN BE ROCKY, METALLIC, OR A MIX OF BOTH.

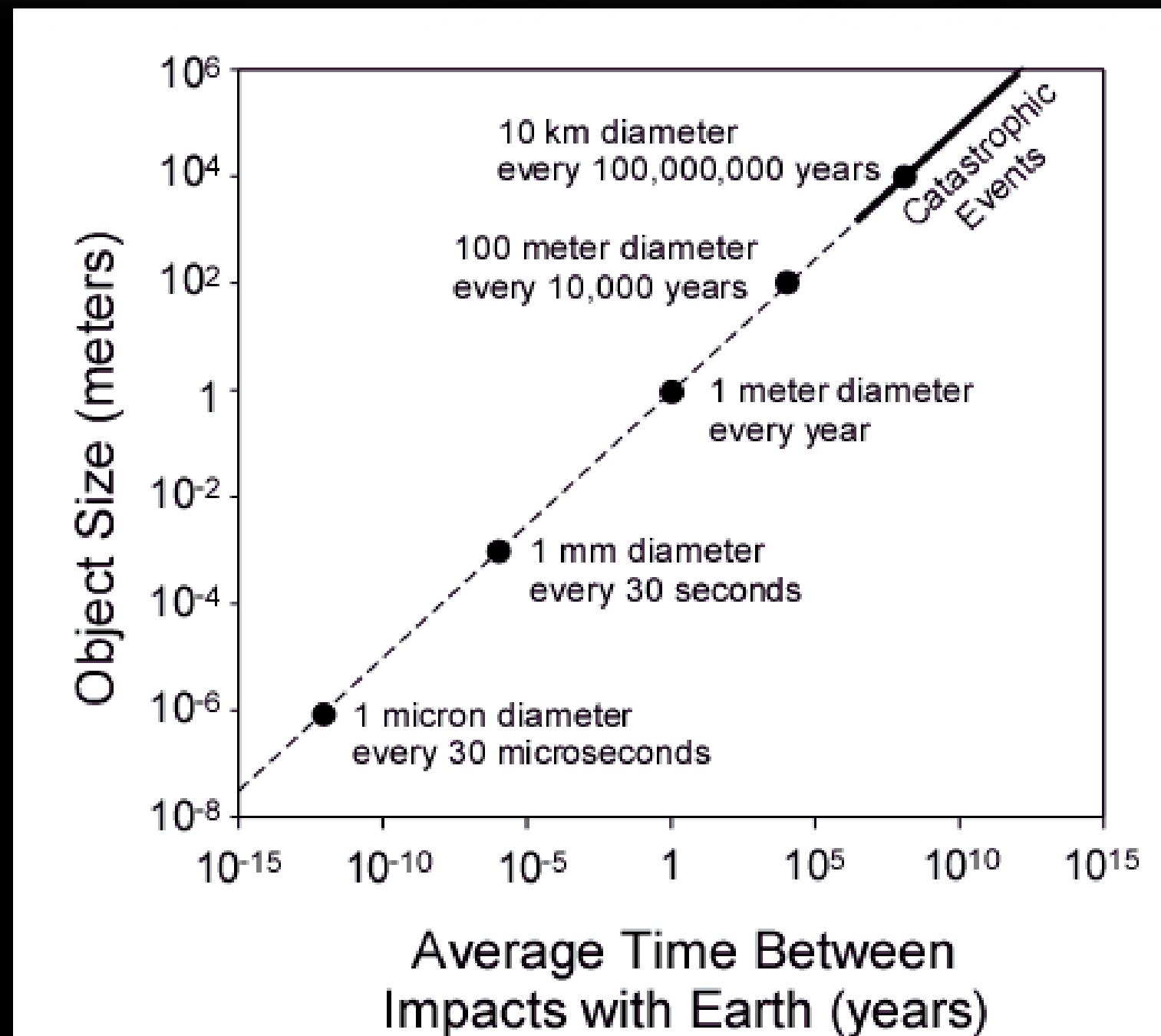
HAS ANYONE BEEN INJURED FROM A METEORITE?

THE FIRST DOCUMENTED CASE OF A PERSON BEING HIT BY A METEORITE IN THE U.S. WAS ANN HODGES IN 1954. A 10-POUND SPACE ROCK CRASHED THROUGH HER ROOF AND INJURED HER WHILE SHE WAS NAPPING!

WHAT HAS BEEN THE MOST HARMFUL EVENT IN HISTORY?

TUNGUSKA EVENT (1908, RUSSIA): A MASSIVE EXPLOSION FLATTENED OVER 800 SQUARE MILES (2,000 KM²) OF FOREST. IT RELEASED RELEASED ENERGY EQUIVALENT TO 10–15 MEGATONS OF TNT (ABOUT 1,000 TIMES THE HIROSHIMA BOMB).

Meteorites & size



METEORITES WITH DIAMETERS OF ABOUT(1MM) STRIKE THE EARTH ABOUT ONCE EVERY 30 S. UPON ENTERING THE EARTH'S ATMOSPHERE THE FRICTION OF PASSAGE THROUGH THE ATMOSPHERE GENERATES ENOUGH HEAT TO MELT OR VAPORIZIZE THE OBJECTS, RESULTING IN SO CALLED SHOOTING STARS.

Meteorite Landings Dataset

An official website of the United States government [Here's how you know](#)

 DATA.GOV DATA METRICS OPEN GOVERNMENT CONTACT

DATA CATALOG  / Datasets Organizations 


National Aeronautics and Space Administration
NASA's vision: To reach for new heights and reveal the unknown so that what we do and learn will benefit all humankind. To do that, thousands of people have been working around...
[read more](#)

National... / data.nasa.gov Meteorite Landings  Metadata Updated: December 6, 2023

This comprehensive data set from The Meteoritical Society contains information on all of the known meteorite landings. The Fusion Table is collected by Javier de la Torre and we've also provided an XLS file that consists of 34,513 meteorites and includes the following fields: place type_of_meteorite mass_g fell_found year database coordinate_1 coordinates_2 cartodb_id created_at updated_at year_date longitude latitude geojson

**5/14/13 Please find an updated data set from The Meteoritical Society that includes more recent meteorites. Under NameType, 'valid' is for most meteorites and 'relic' are for objects that were once meteorites but are now highly altered by weathering on Earth.

<http://visualizing.org/datasets/meteorite-landings>

Access & Use Information

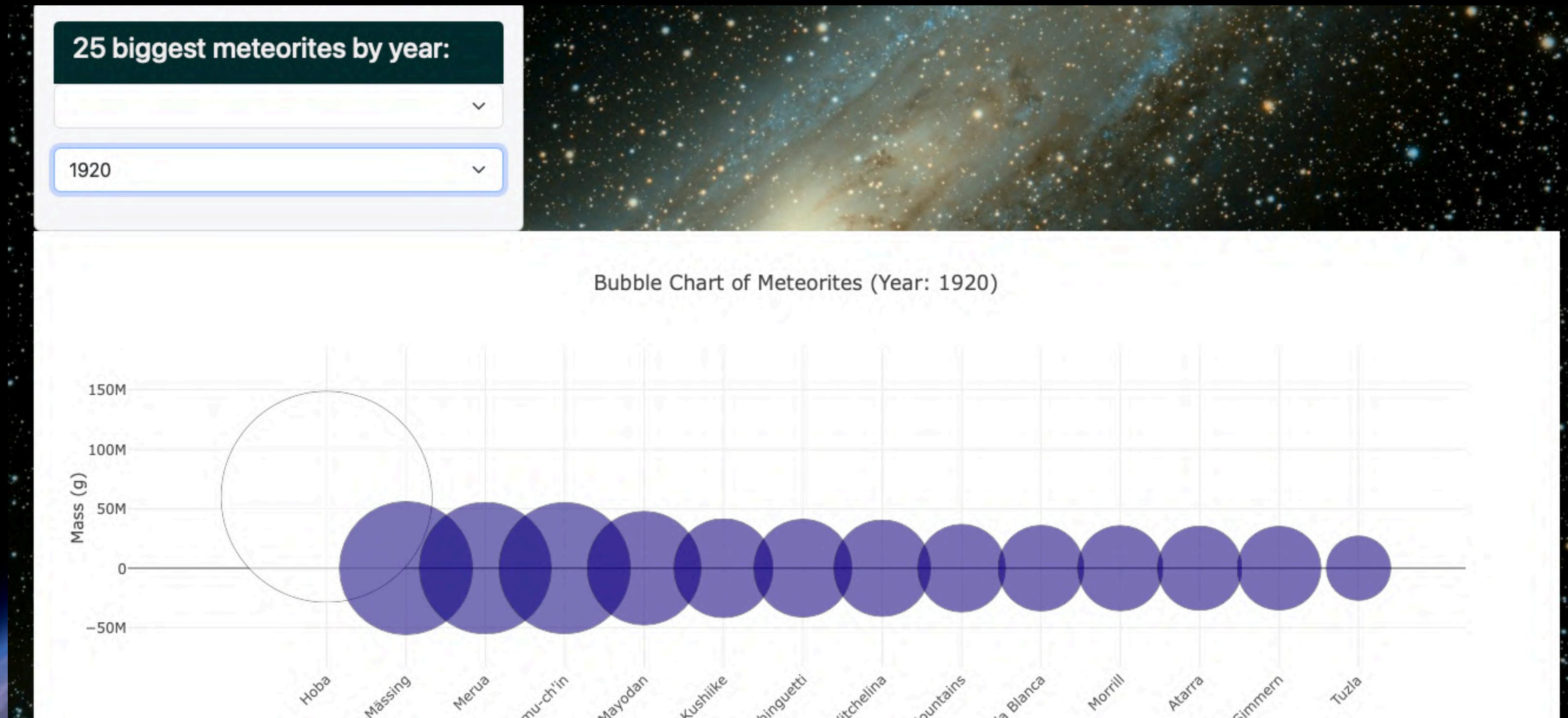
 **Public:** This dataset is intended for public access and use.

 **License:** No license information was provided. If this work was prepared by an officer or employee of the United States government as part of that person's official duties it is considered a U.S. Government Work.

THIS COMPREHENSIVE DATA SET FROM THE METEORITICAL SOCIETY CONTAINS INFORMATION ON ALL OF THE KNOWN METEORITE LANDINGS. THE FUSION TABLE HAS A FILE THAT CONSISTS OF 34,513 METEORITES AND INCLUDES THE FOLLOWING FIELDS: PLACE TYPE_OF_METEORITE MASS_G FELL_FOUND YEAR DATABASE COORDINATE_1 COORDINATES_2 CARTODB_ID CREATED_AT UPDATED_AT YEAR_DATE LONGITUDE LATITUDE GEOJSON

Meteorite facts

THE LARGEST METEORITE FOUND ON EARTH IS THE HOBA METEORITE DISCOVERED IN NAMIBIA IN 1920. THE HOBA METEORITE WEIGHS ROUGHLY 60,000 KILOGRAMS (120,000 POUNDS). THE HOBA METEORITE IS SO BIG, AND SO HEAVY, IT HAS NEVER BEEN MOVED FROM WHERE IT WAS FOUND!



More meteorite facts

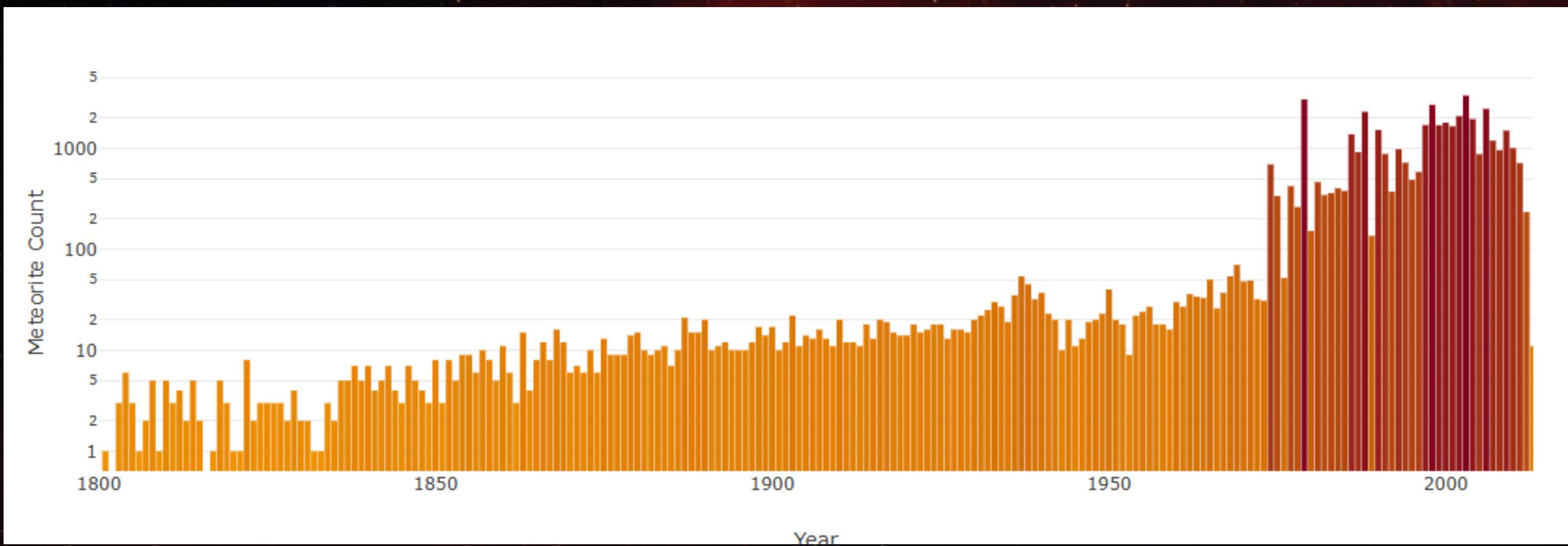
Odds of Dying in the U.S. from Selected Causes in a Human Lifetime

Data from Clark R. Chapman (2007)

<http://www.boulder.swri.edu/clark/binhaz07.ppt>

Cause	Odds
Motor Vehicle Accident	1 in 90
Murder	1 in 185
Fire	1 in 250
Firearms Accident	1 in 2,500
Drowning	1 in 9,000
Flood	1 in 27,000
Airplane Crash	1 in 30,000
Tornado	1 in 60,000
Asteroid/Comet Impact Global	1 in 75,000
Earthquake	1 in 130,000
Lightning	1 in 135,000
Asteroid/Comet Impact Regional	1 in 1,600,000
Food Poisoning by Botulism	1 in 3,000,000
Shark Attack	1 in 8,000,000
Odds of winning the PowerBall	1 in 195,249,054

Total Count of Meteorite Falls by Year



- Gradual increase in meteorite falls
- Significant rise after 1950
- Peak in 2003 with a total of 3323 meteorites falls.

Webapp URL:

[HTTPS://LUISG47.GITHUB.IO/PROJECT3/](https://luisg47.github.io/project3/)



References:

- EL TIEMPO. (2025, FEBRERO 8). ASTEROIDE 2024 YR4: ESTOS SON LOS PAÍSES CON MAYOR RIESGO DE SER IMPACTADOS SI OCURRE UNA COLISIÓN CON LA TIERRA. EL TIEMPO. RECUPERADO DE [HTTPS://WWW.ELTIEMPO.COM/VIDA/CIENCIA/ASTEROIDE-2024-YR4-ESTOS-SON-LOS-PAISES-CON-MAYOR-RIESGO-DE-SER-IMPACTADOS-SI-OCURRE-UNA-COLISION-CON-LA-TIERRA-3425209](https://www.eltiempo.com/vida/ciencia/asteroide-2024-yr4-estos-son-los-paises-con-mayor riesgo-de-ser-impactados-si-ocurre-una-colision-con-la-tierra-3425209)
- NASA. (N.D.). METEORS & METEORITES - FACTS. NASA SCIENCE. RETRIEVED FEBRUARY 11, 2025, FROM [HTTPS://SCIENCE.NASA.GOV/SOLAR-SYSTEM/METEORS-METEORITES/FACTS/#H-METEORIDS](https://science.nasa.gov/solar-system/meteors-meteorites/facts/#H-METEORIDS)
- NASA. (N.D.). METEORITE LANDINGS DATASET. DATA.GOV. RETRIEVED FEBRUARY 11, 2025, FROM [HTTPS://CATALOG.DATA.GOV/DATASET/METEORITE-LANDINGS](https://catalog.data.gov/dataset/meteorite-landings)

Thank You
