



Close Encounters Around the World: Are there aliens among us?



Presented by Veronica Starovoit

The likelihood of aliens

- The Drake Equation predicts the Milky Way has around 100 billion star systems that have habitable planets which can host intelligent life.
- Researchers predict finding alien life by 2040 if they examine just 10K habitable planets or 2028 if they examine 1M.

The likelihood of aliens cont.

- Whether aliens have already been to earth is a data-rich question. About 5% of all UFO sightings can't be explained by weather or human technology. Similarly, about 4.6% of professional astronomers reported witnessing or recording inexplicable aerial phenomena.
- More than half of surveyed astronomers also support the study of UFOs.

Introduction

- **Audience:** This presentation is for anyone interested in exploring UFO phenomena.
 - Astronomers
 - Alien hunters
 - Science fiction authors
 - Tour guides
- **Recommendations:** In order to find UFOs to research, we'll explore and summarize:
 - The most likely locations UFO encounters may occur
 - Common descriptive characteristics for recorded sightings
 - What time (during year, day) most sightings occur

Introduction cont.



- What patterns, if any, exist that seem more than coincidental?

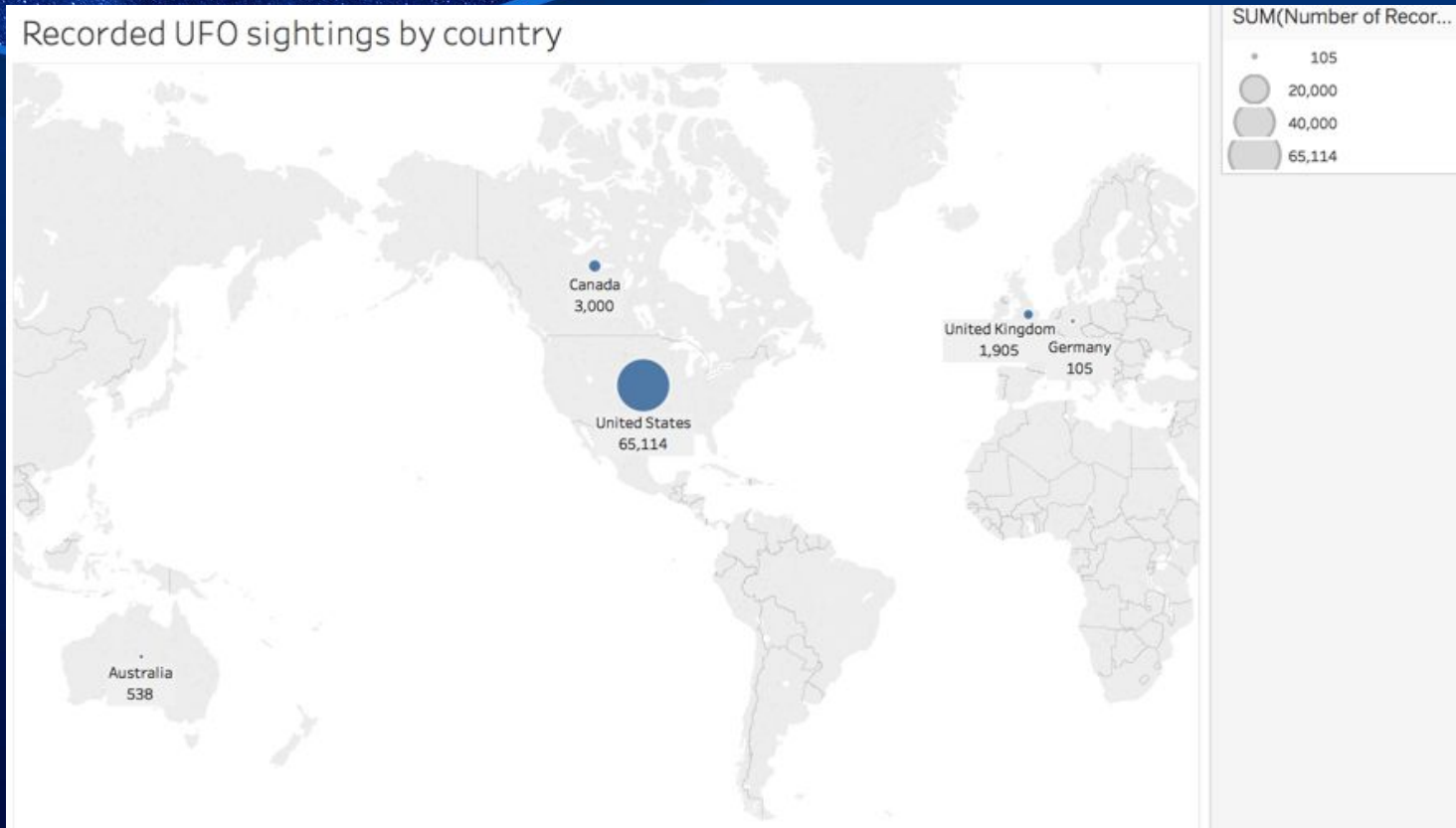
The data

- <https://www.kaggle.com/NUFORC/ufo-sightings/home>
- Recorded sightings from January 1910-September 2013 (80,333 unique records)
- Data is sourced from the National UFO Reporting Center (NUFORC), which is a US organization founded in 1974 that investigates UFO sightings and/or alien contacts

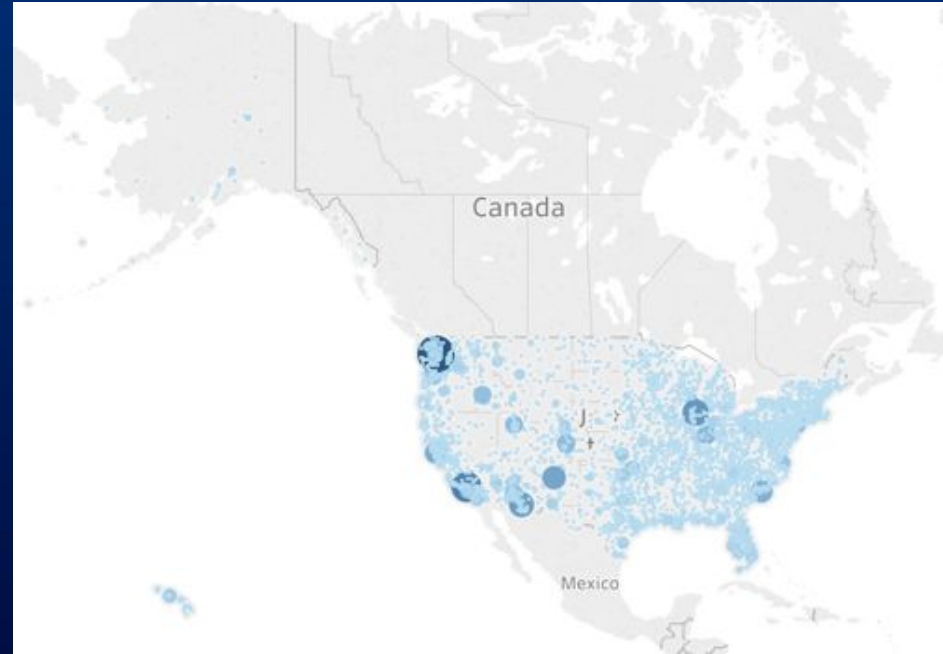
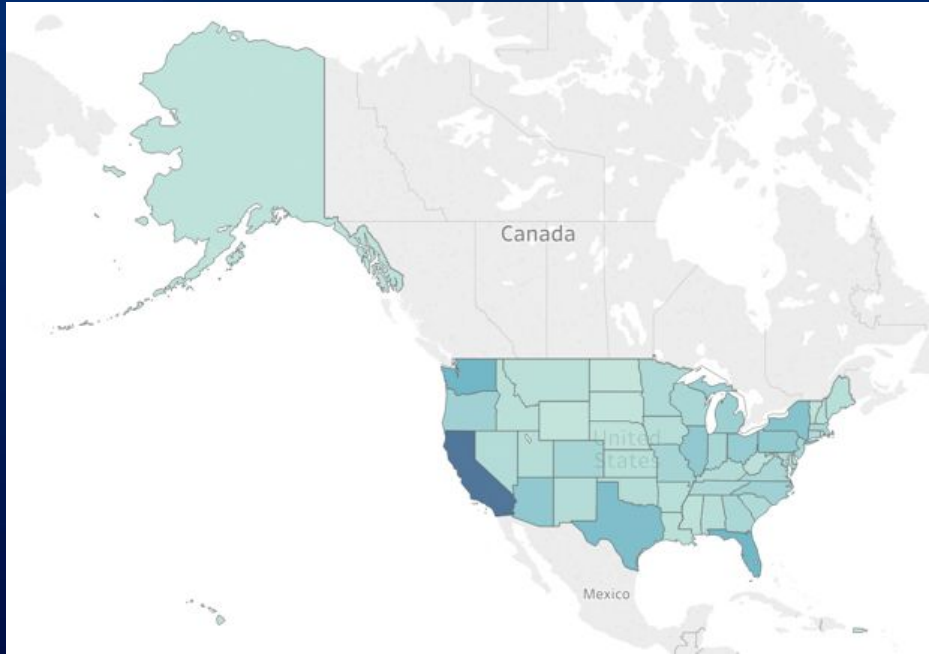
Data cleaning

- This dataset came with two files: a scrubbed and unscrubbed one. The unscrubbed data includes entries where the location of the sighting was not found or blank (0.8146%) or that had erroneous or blank time (8.0237%). I used the scrubbed file to exclude these.

Locations of sightings

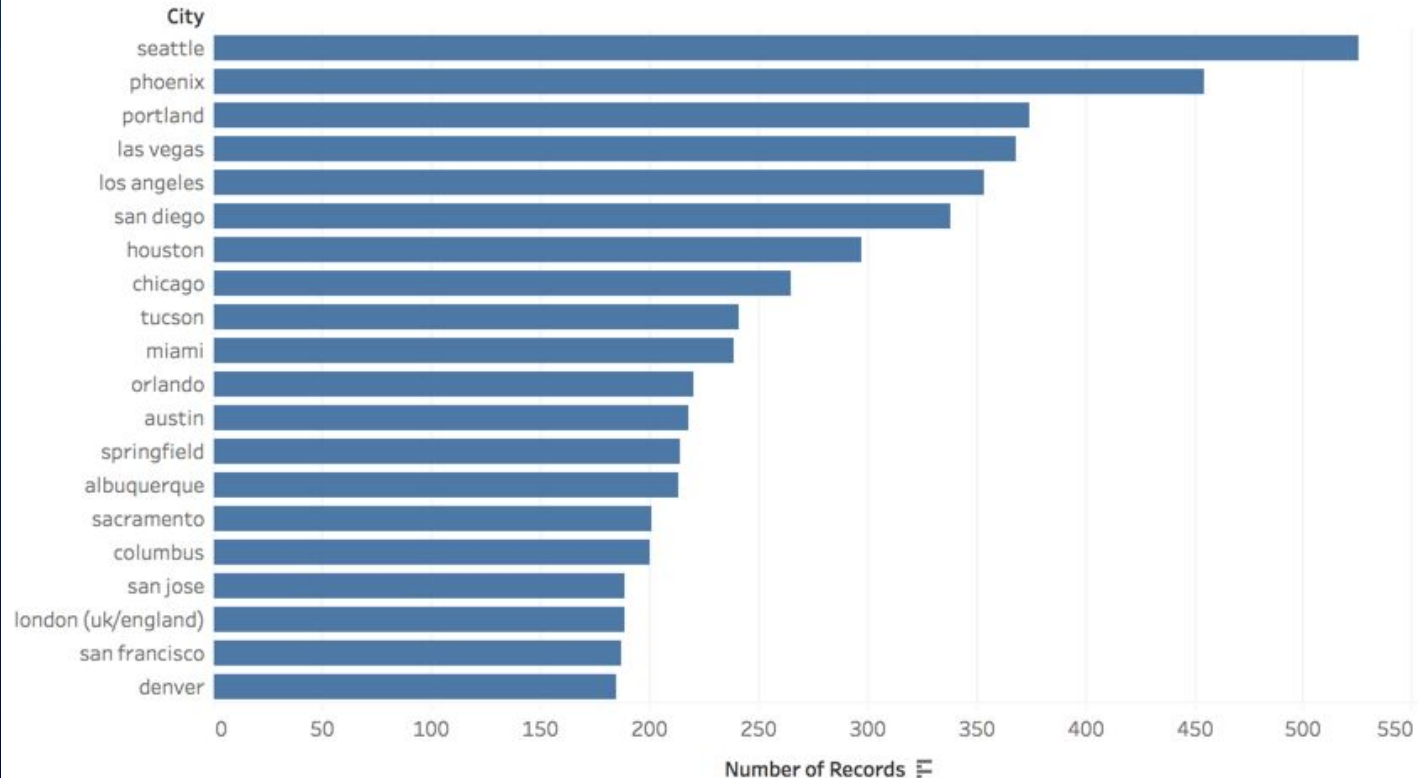


Locations of sightings

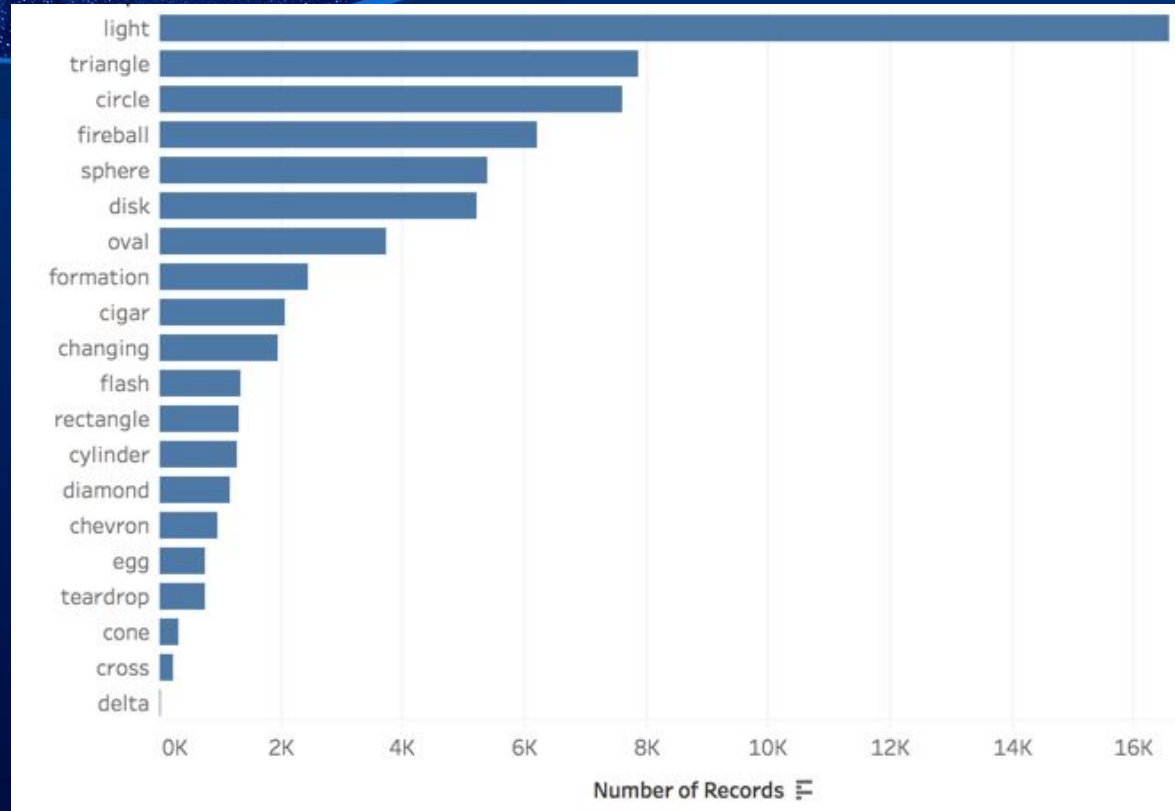


Cities with the most sightings

Top 20 cities by UFO sighting count



Shape of UFOs



Descriptive words

RED LIGHT pulsating light
Very Bright Light flashing light white light
Fireball. UFO Sighting Strange light in the sky Orange Light 3 lights in the sky
Green Flash Green Fireball strange light
Bright light in the sky see above bright light Green meteor
Red light in the Sky
Light in the sky lights in the sky strange lights in the sky
possible UFO sighting Orange ball of light. UFO Orange lights in the sky
fireball Light Fast moving white light bright white light Lights in the sky.
ball of fire Orange lights Fast Moving Light flash of light Bright lights fire ball
FIRE IN THE SKY Ball of Light
I saw a UFO

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Encounter duration

Duration of sightings



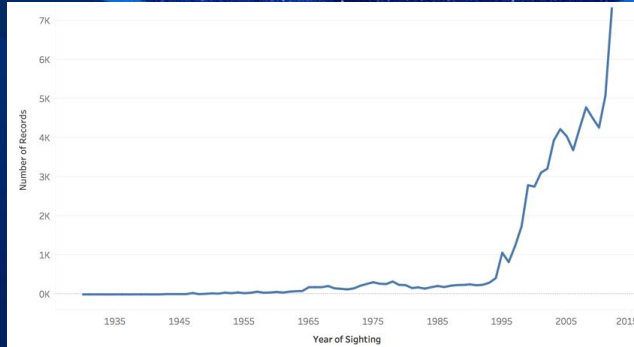
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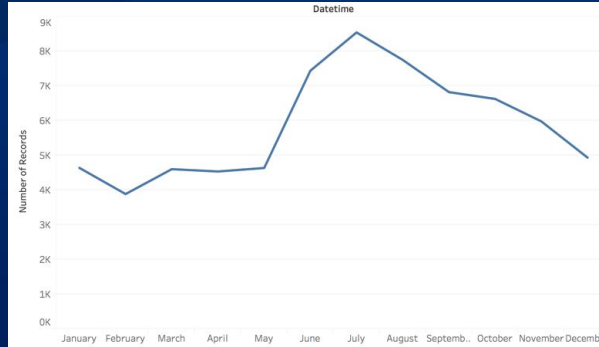
524 4,716

Time and date

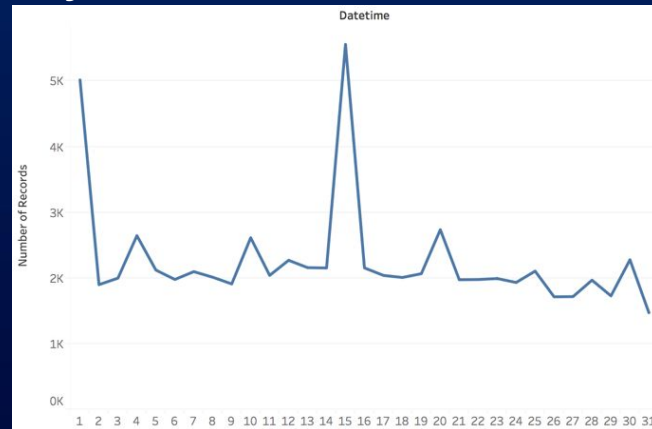
Year



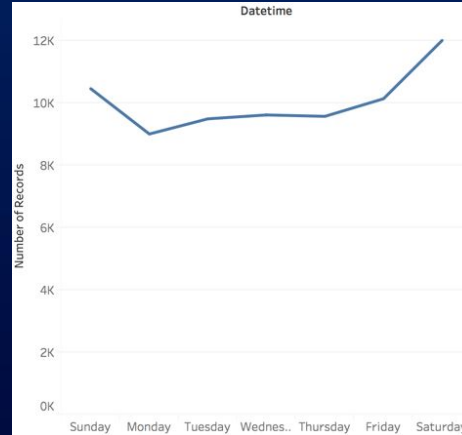
Month



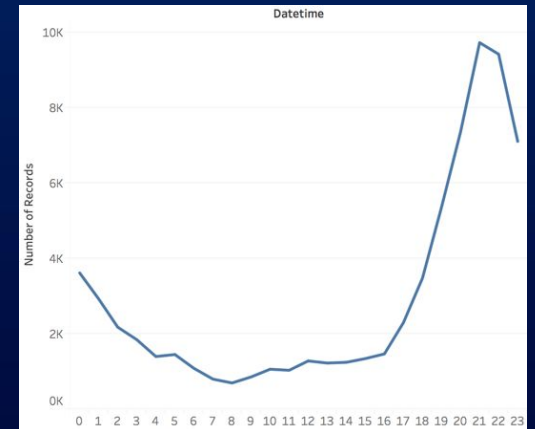
Day of month



Day of week



Hour





Conclusions

- Best locations to seek out UFOs:
 - Top state: California
 - Top cities: Seattle, Phoenix, Portland, Las Vegas, Los Angeles
- Top indicators to look for:
 - Light (white, green, orange, red)
 - Fireballs
 - Around a 5 minute occurrence
- Best times to look:
 - Summer (June and July)
 - Between the hours of 6PM-midnight



Limitations of data and further questions

- Data is limited to 2013, and there was a large spike in records for the last few years. Is there newer data?
- NUFORC is a US institution based in Washington state (once Seattle, now Davenport). Does this skew data?
- I recommend reaching out to NUFORC to see if they have any idea why sightings on the 1st and 15th of the month are so common.
- Much data comes during weekends and “drunk” hours. Be skeptical and think about this and other external factors.
- Overlay with events - Roswell and other famous sightings.

Questions

