



TEAM PICARD

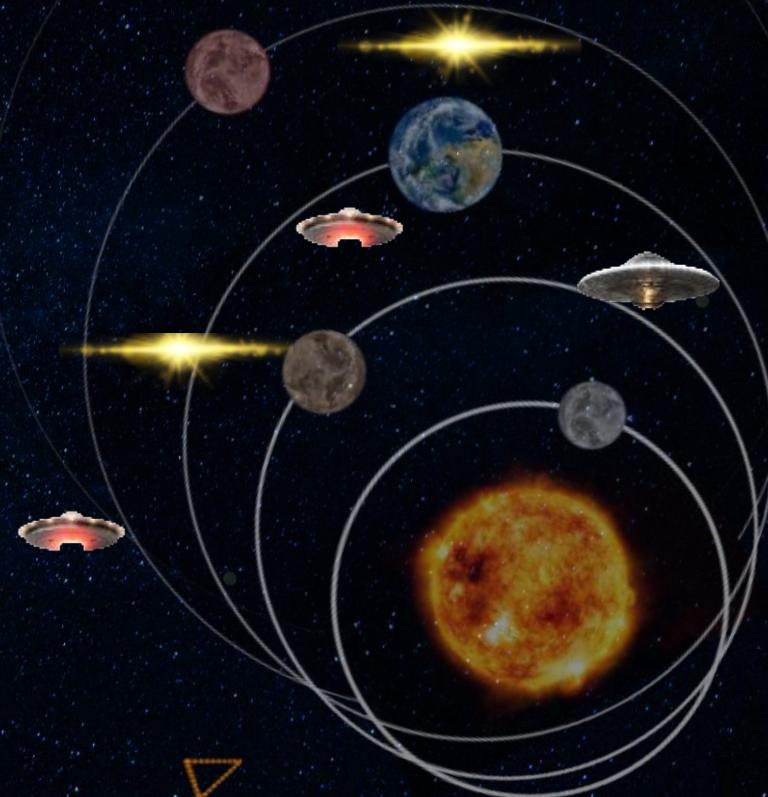
THAT IS WHAT IT IS TO BE HUMAN:
TO MAKE YOURSELF MORE THAN YOU ARE



VIEW AT
YOUR OWN
DISCRETION

SOMETHING IS HAPPENING IN OUR SKIES

- For **decades** there have been **strange, unexplained sightings** in the sky by the military, commercial airline pilots, and other trained observers all over the world
- Many of these sightings have been **confirmed by radar** and FLIR (Forward Looking InfraRed) radar data
- UFOs have been **acknowledged by the U.S. Government** in a recent report as a genuine mystery they have been studying for years
- This topic should be **taken seriously**, without stigma, by our scientific communities and the general public so we can study and have a better **understanding of the universe around us**



CREDIBLE GOVERNMENT OFFICIALS SPEAKING OUT



HARRY REID
SENATE MAJORITY LEADER, NV

Has been sounding the alarm on the need to find out what UFOs are since 2007.



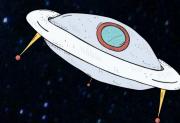
DAVID GRUSH
FORMER INTELLIGENCE OFFICIAL

Testified the “U.S. government has evidence of “non-human” biologics.”



**PAUL HELLYER, CANADA'S
FORMER MINISTER OF DEFENCE**

Testified in D.C. in 2014 that “aliens are living among us” and “working with the U.S. government,” among other bombshells.



**HAIM ESHED, FORMER ISRAELI
DEFENSE GENERAL & SPACE CHIEF**

2020: Claimed there’s a “galactic federation,” and that aliens are on a mission to understand the “fabric of the universe.”



**LUIS ELIZONDO, FORMER
INTELLIGENCE OFFICER, US DOD**

Resigned as head of the Pentagon’s UFO Program because “UFOs exist – but the government doesn’t want you to know it.”



**NICK POPE, FORMER OFFICER,
BRITISH MINISTRY OF DEFENCE**

Where his duties included investigating reports of UFO sightings. Sounding the alarm since he left in 2006.

EXECUTIVE SUMMARY

Are We Alone?

- As far back as 1459 B.C., humans have documented unknown, technological objects in the sky
- Congressional, Pentagon and various intelligence agencies reports concluded some are real, unknown objects
- Sharing information on the basis of open data to answer a question that is clearly of great interest to the public, will enhance confidence in evidence-based knowledge
- Provides the potential to learn so much, from technological advances to the meaning behind existence
- NASA's 2023 UAP Report noted that artificial intelligence and machine learning are essential for identifying rare occurrences, including UFOs



QUESTIONS

- What can we learn about previously documented and recorded UFO sightings?
- What is the trend?
- How do we utilize the trend to predict future sightings?

APPROACH

- Divided and conquered based on everyone's strengths
- Understood the raw data
- Identified key targets and sliced data as necessary
- Stayed open-minded and willing to go where no (hu)man has gone before

1997 Phoenix, AZ Lights

Hundreds of witnesses claimed to see "otherworldly" lights across AZ, NV and Mexico

2001 New Jersey Turnpike

Drivers marveled at the sight of strange orange and yellow lights in a V formation over NY and NJ

2004 San Diego, CA USS Nimitz

Carrier strike group tracked objects at 80,000 ft high plummet to hover right above the Pacific

2006 Chicago, IL O'Hare Airport

UFO sighting witnessed by 12 United Airlines employees outside and above the airport

2008 Stephenville, TX Sightings

Reported white lights in a single horizontal arc, then in vertical parallel lines a mile long traveling 3,000 mph

2010 Washington, DC

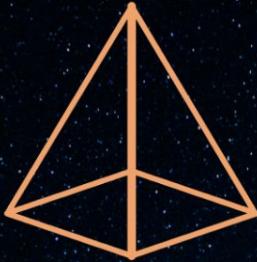
Missile launch officers saw UFOs hovered over launch sites send beams of light into silos holding nuclear missiles, sometimes disabled or briefly activated them

2011 Lafayette, CO Sightings

Residents saw a strange triangular formation of lights hovering above Lafayette that looked like tiny, bright alien ships. No sound was reported

CREDIBLE UFO SIGHTINGS





DATA



DATA COLLECTION, CLEANUP, AND EXPLORATION PROCESSES

The Proof is Out There

Began with a massive CSV file with global data from 1910 – 2014, retrieved from [NURORC](#), which was used in week 5 class

To reach our end goals, we needed to create a more manageable dataset and so we divided our clean-up and exploration into phases:

Phase 1: Cleaning and filtering the dataset to improve its usability and narrow the scope of our project

Phase 2: Identifying the most active period and states for UFO sightings

Phase 3: Predictions of State Data

Phase 4: Exploration and analysis of shapes of sightings

Phase 5: Predictions and Geo-Visualizations



RESULTS



DATA CLEANUP

1 ufo_sightings_df
rows = 80,332

cleaned_us_ufo_df
rows = 63,099

3 cleaned_us_ufo_df_new
rows = 57,543

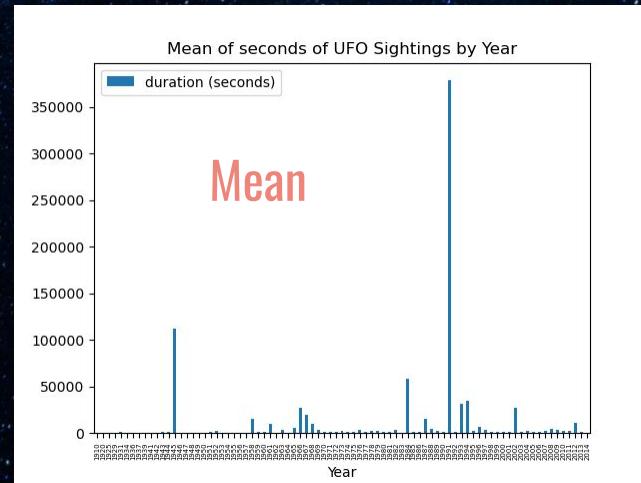
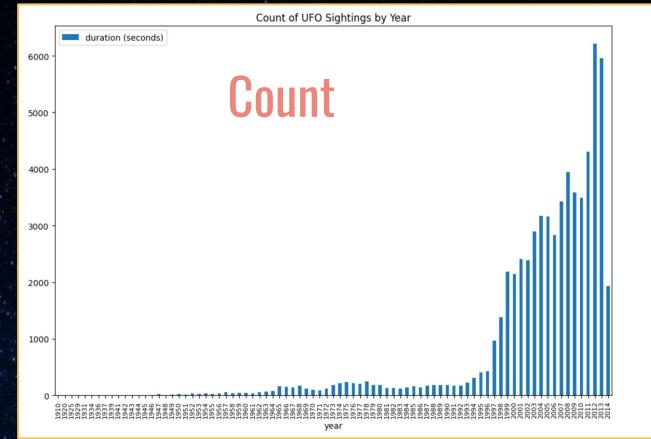
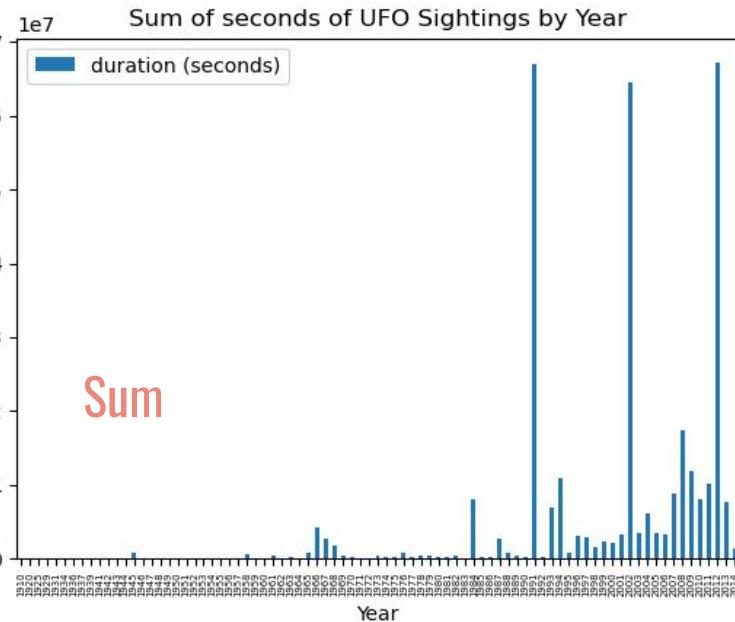
geo_df
23,892

4



WHAT DOES DATA SHOW

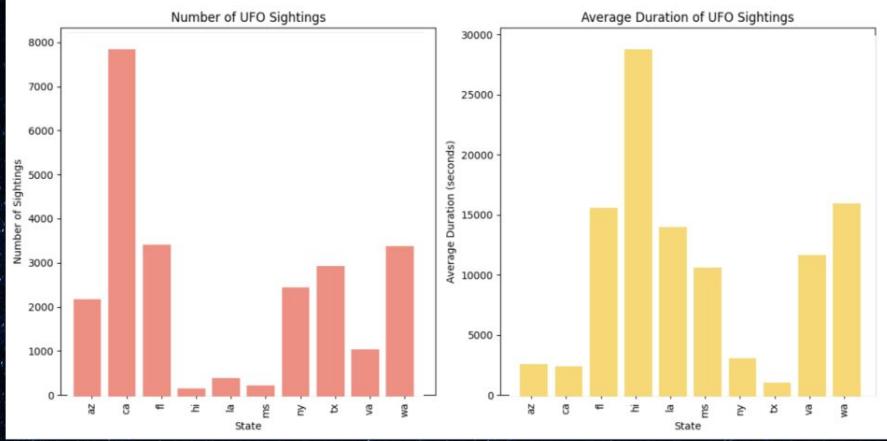
Sightings in seconds, by year



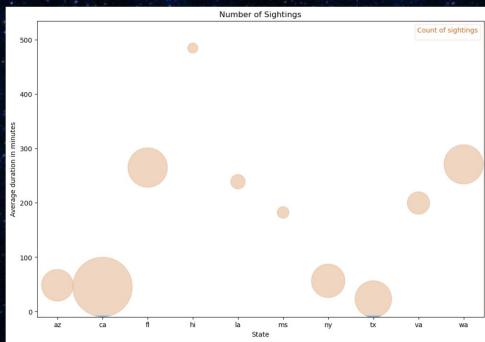
REFINING THE GEOGRAPHIC SCOPE OF DATA



Count and Duration
Top 10 states



Arizona, California,
Hawaii, Louisiana,
Mississippi, New York,
Texas, Virginia, and
Washington

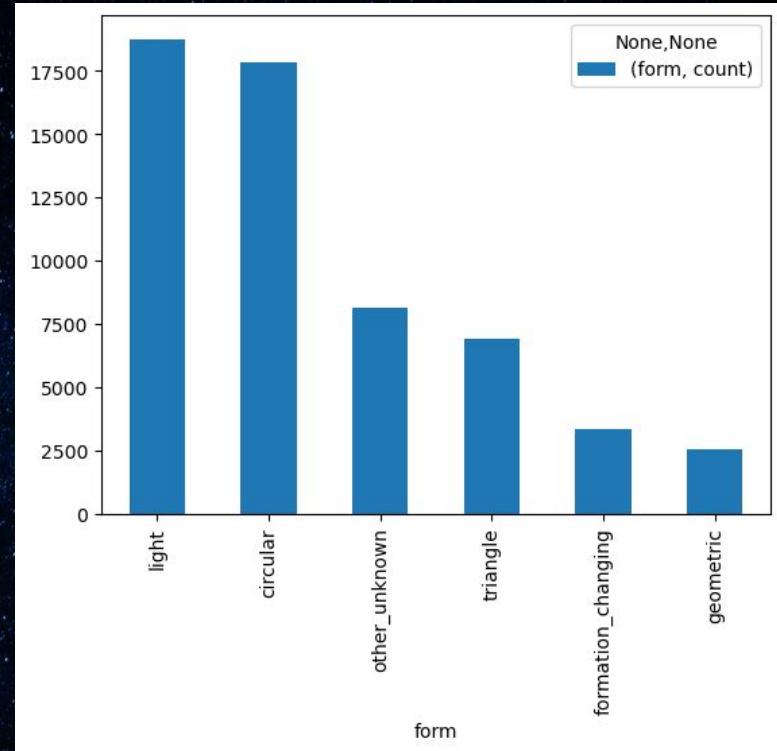
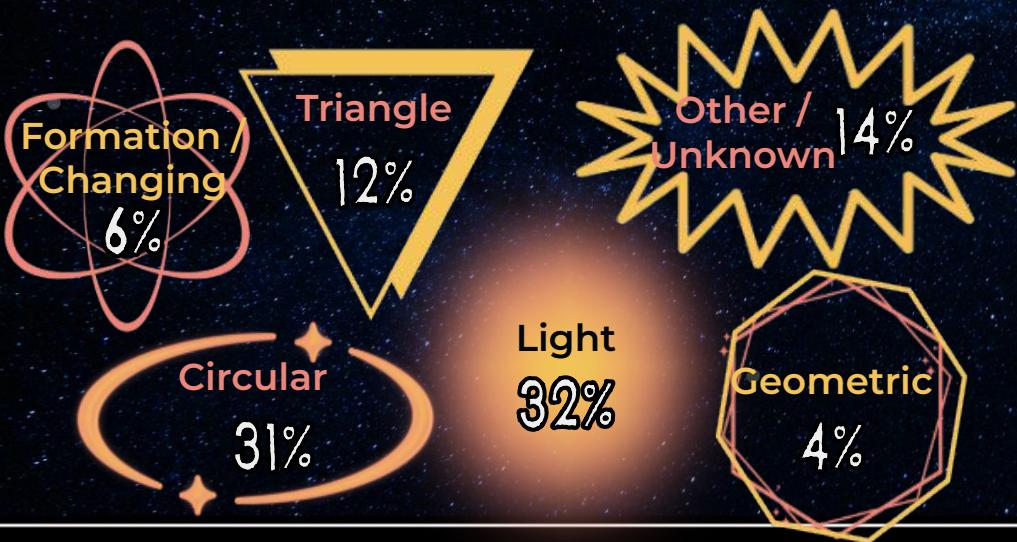


Two ways to represent data

The Shapes of Things to Come

Comparing states and national trends

- Unwieldy database with 28 number of options
- Grouped shapes into 6 subsets
- Majority: Light and Circular
- Would we observe any trends in shape of the reported sightings by year, state, and sighting (count vs. long duration)



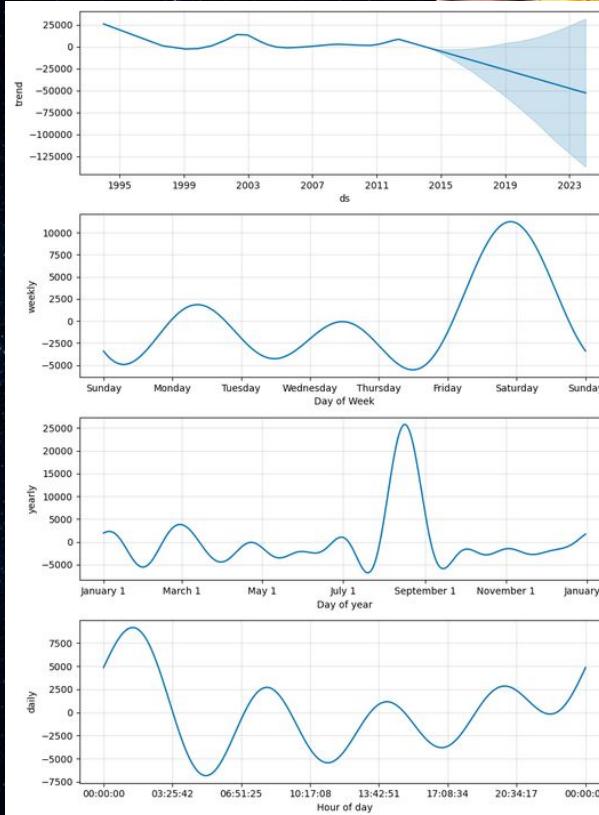
PREDICTING THE UNPREDICTABLE

Next Steps

- The data seem to show a slight downward trend
- Best day to view seems to be Saturday
- Best time of the year - Mid to late August
- Mid night through 3am is the best time

This data can be used for states to market to UFO enthusiasts. Here is a suggested tagline

Beyond the Stars: Visualizing UFO Encounters



REFLECTIONS AND OPPORTUNITIES

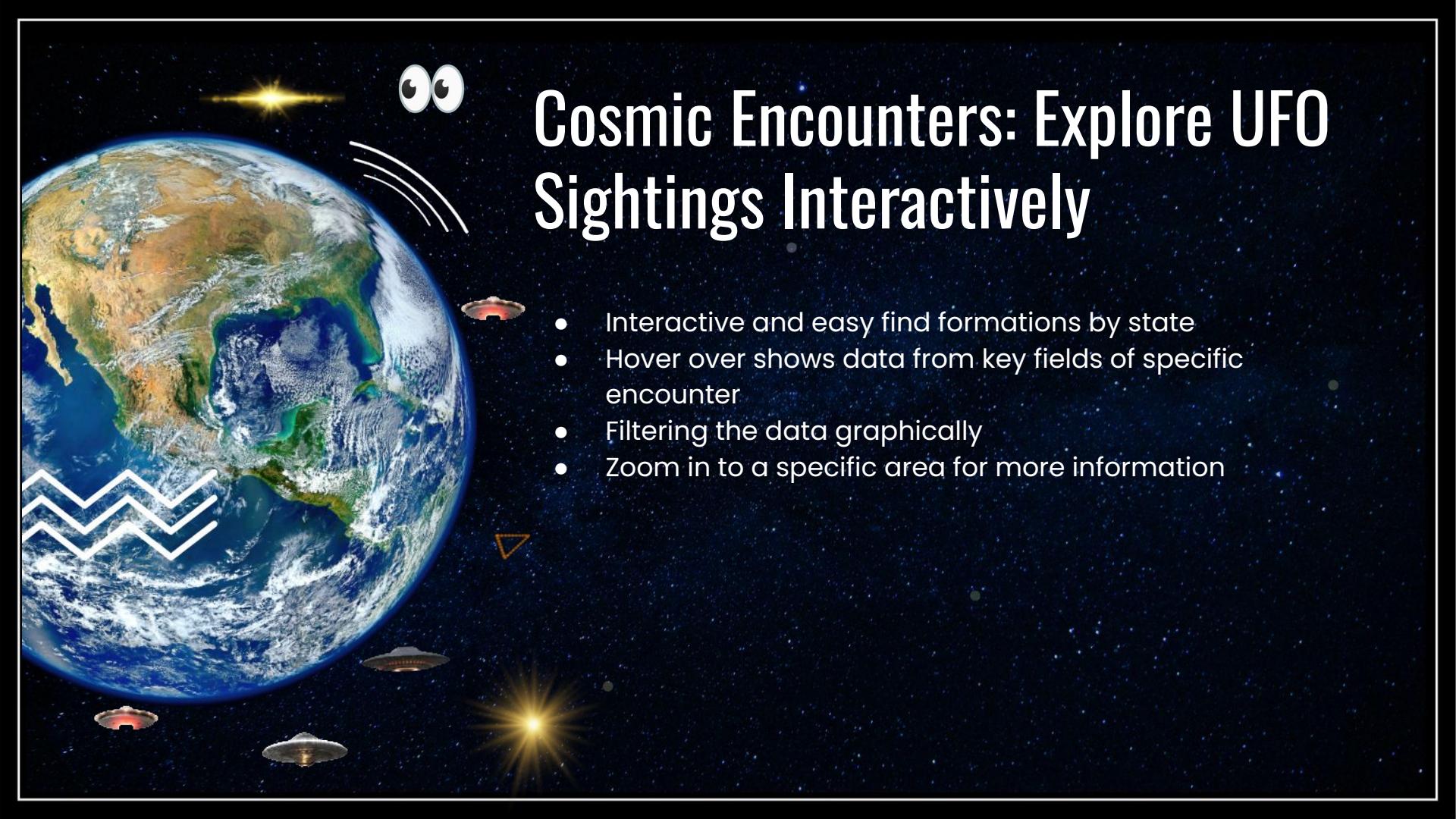
Reflections

- Dataframe ends in mid-2014 and though we found a pretty reputable options to add data until 2020, we just ran out of time
- Pretty large dataframe and though it was well vetted, it was difficult to work with before cleaning and took the bulk of our time
- Dataset is well designed but is based on self-reporting to inherent issues
- Longitude

Opportunities

- Briefly discuss potential next steps for the project.
- Confirm accuracy of the dataframe that if available to expands data to 2020
- Clean and merge
- Compare expected forecast with actual results and forecast out from 2020
- Further explore the data and relationships





Cosmic Encounters: Explore UFO Sightings Interactively

- Interactive and easy find formations by state
- Hover over shows data from key fields of specific encounter
- Filtering the data graphically
- Zoom in to a specific area for more information

“One man cannot summon the future.”

-Spock



Credits, references and thank yous – we couldn't have done it alone

Resources Consulted and Credit

- abbreviation_to_name credit: Jeff Pain
 - <https://gist.github.com/JeffPaine/3083347>
- The curriculum team and Bootcamp Spot for providing us access to the original ufoSightings.csv dataset, which we explored in Module 5
- **Zohaib Khawaja**, for helping us find a solution to convert longitude to a numeric so that we could build our geo-visualization.



QUESTIONS?

Ask at your own risk



THANK YOU!

See you in the orbit

