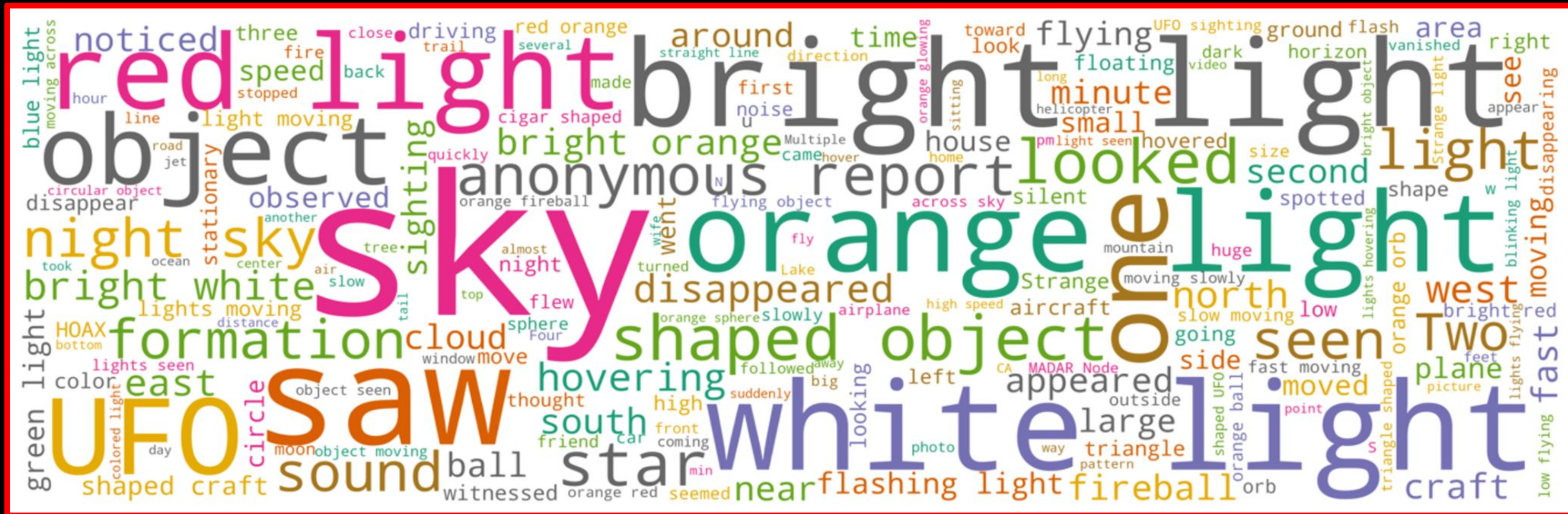


Rationale

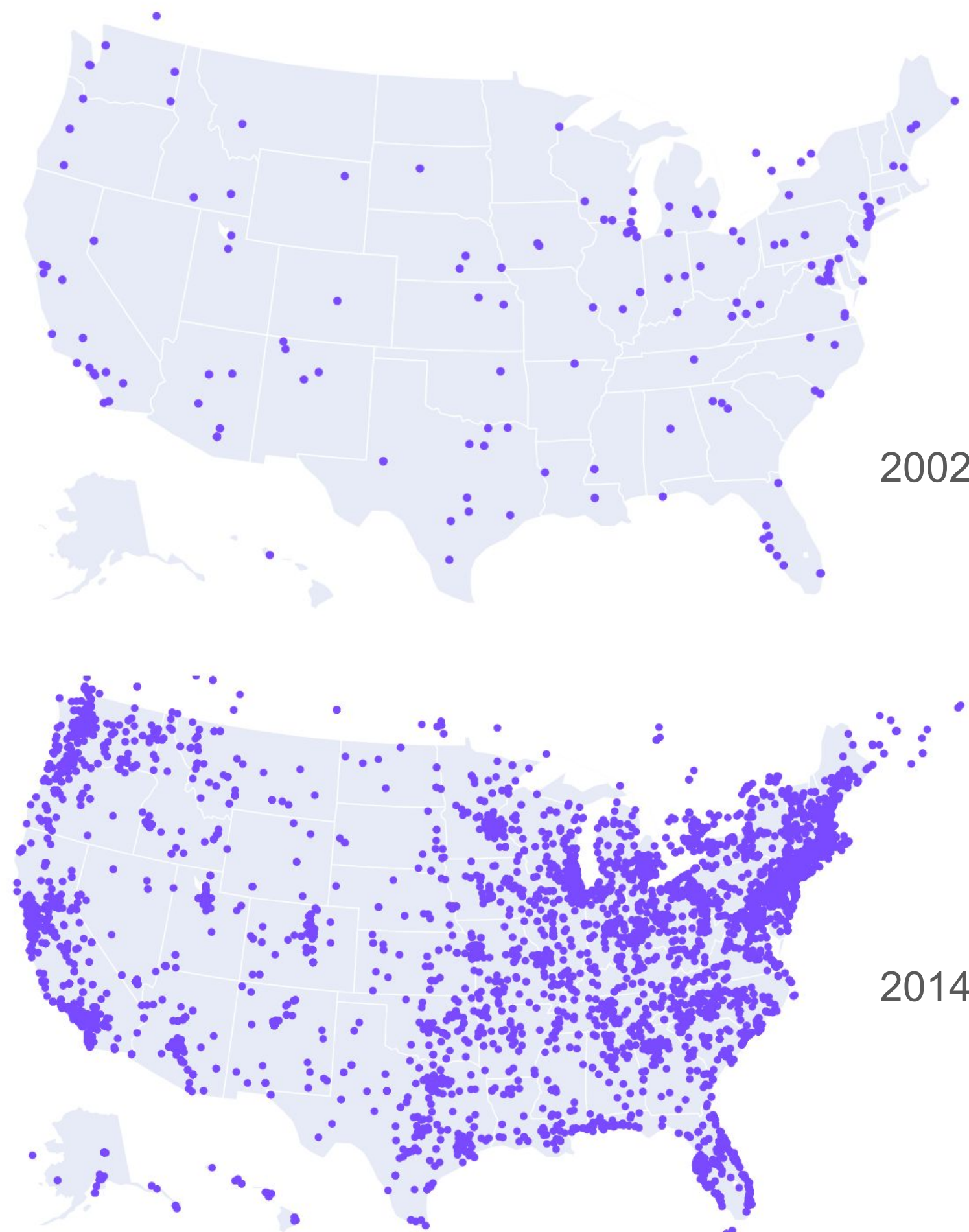
Public interest in UFOs has surged, especially as organizations such as NASA and NUFORC (National UFO Reporting Center) have begun exploring these occurrences. This project aims to apply data science to a large dataset of nearly 90,000 UFO sightings, each report including details such as time, location, and shape. By using python libraries such as Pandas and Seaborns, trends can be uncovered to point to explanations for these phenomena. This analysis aims to show how data science can support research by providing a new approach to processing vast amounts of data. This work could encourage further investigation into UFOs, helping agencies like NUFORC deepen their understanding of these phenomena.

Can a DATA SCIENCE Approach Offer

Additional Insights into the nearly 0,000 UFO Sightings in the USA?



Dot-Distribution Maps (2002-2014)

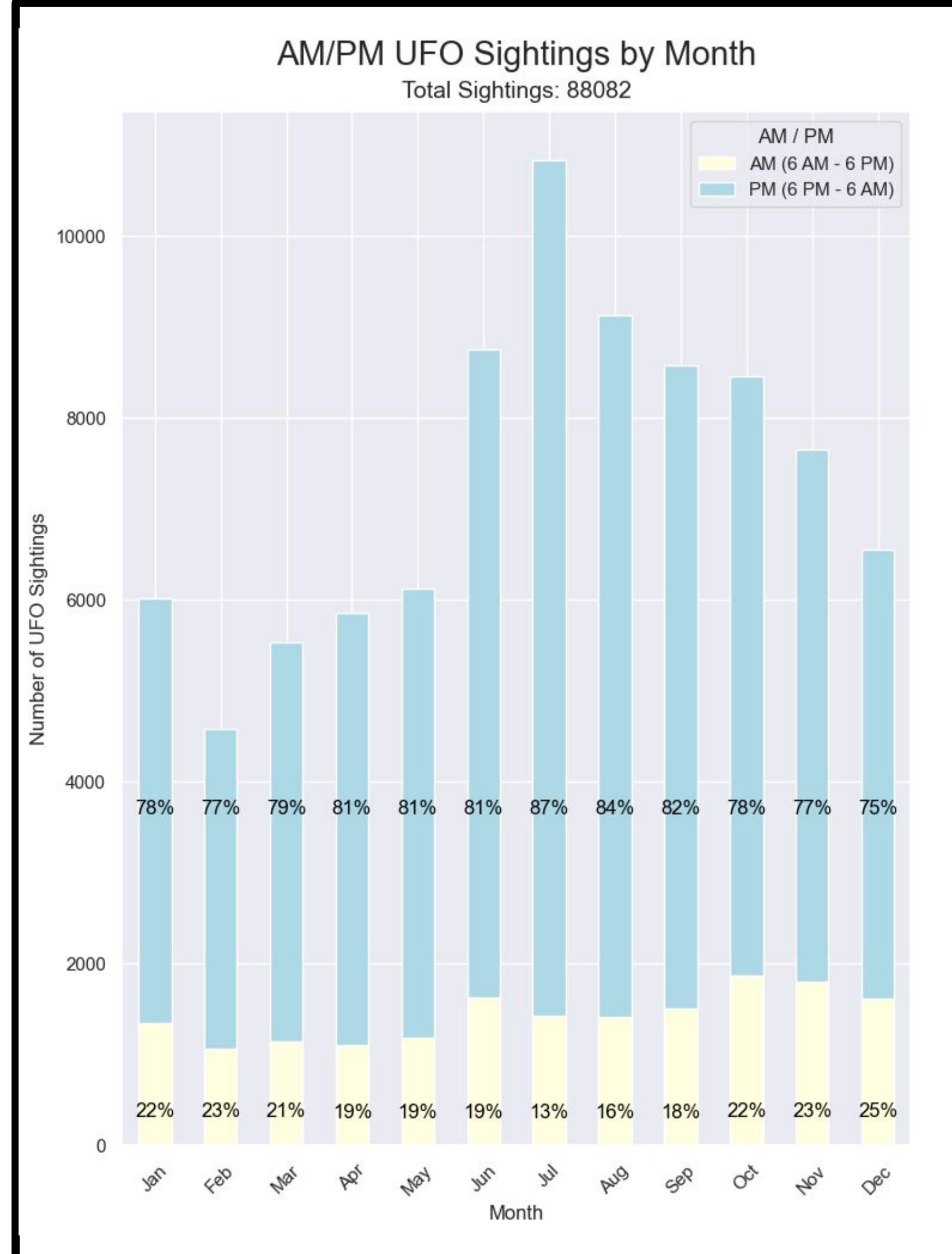
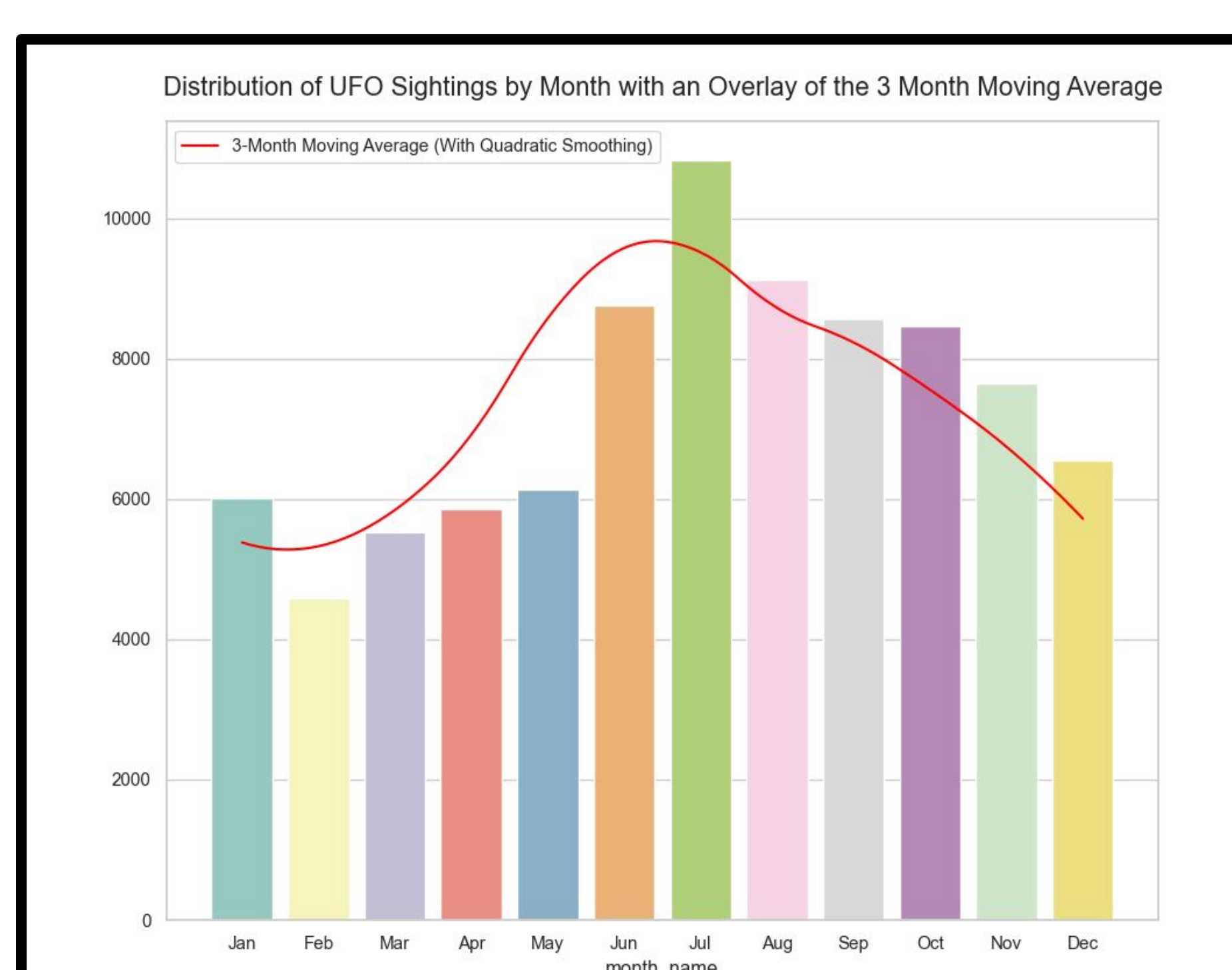
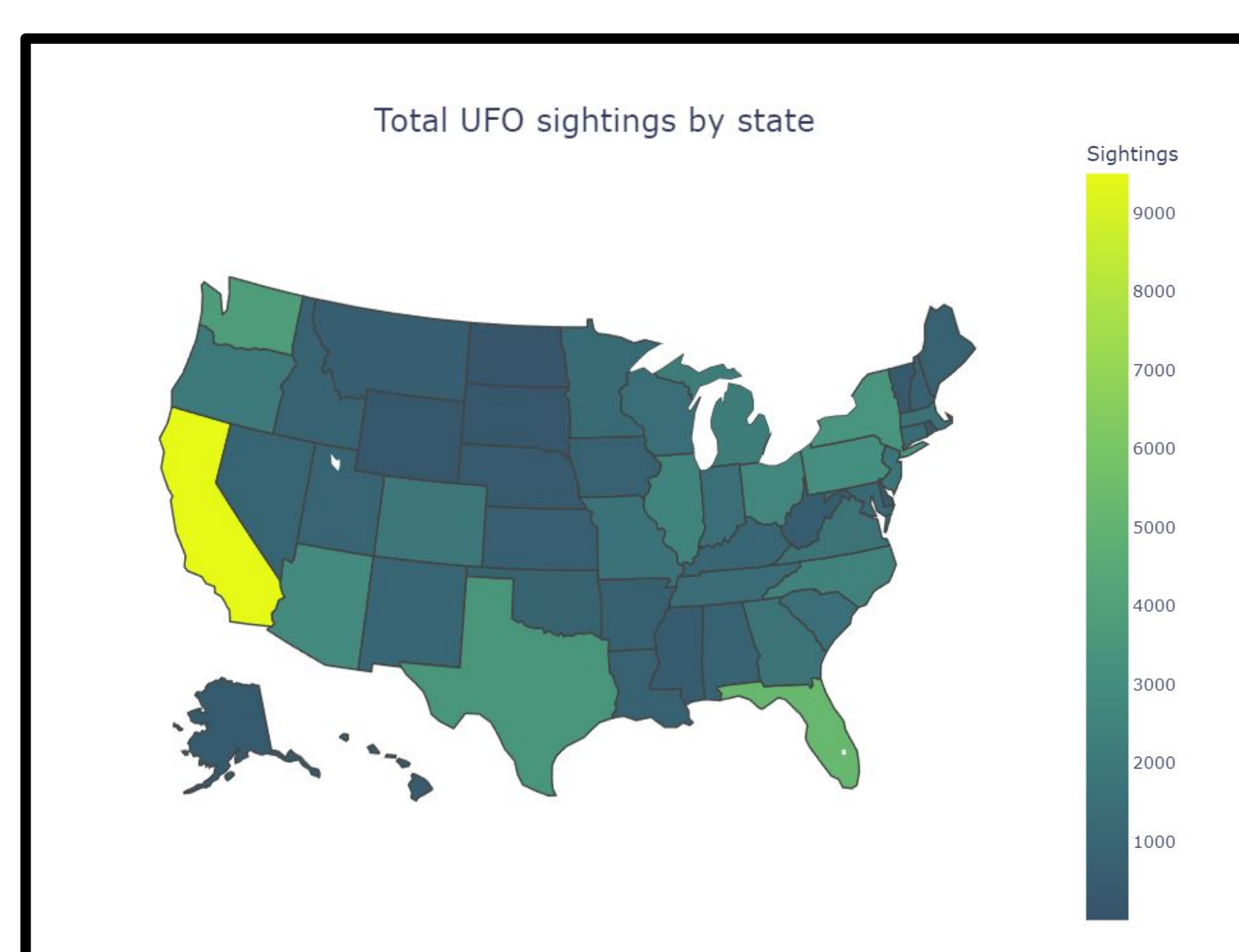
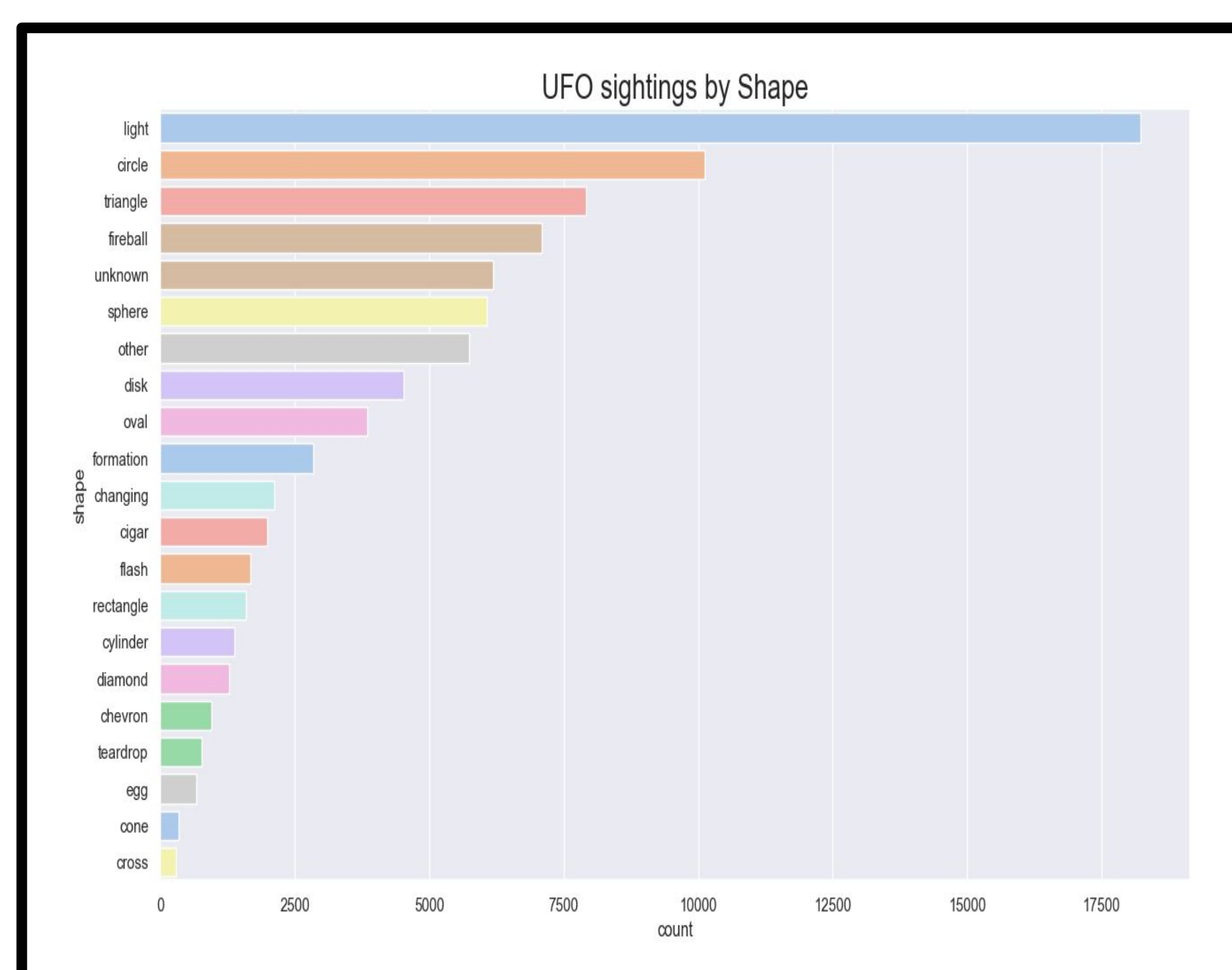
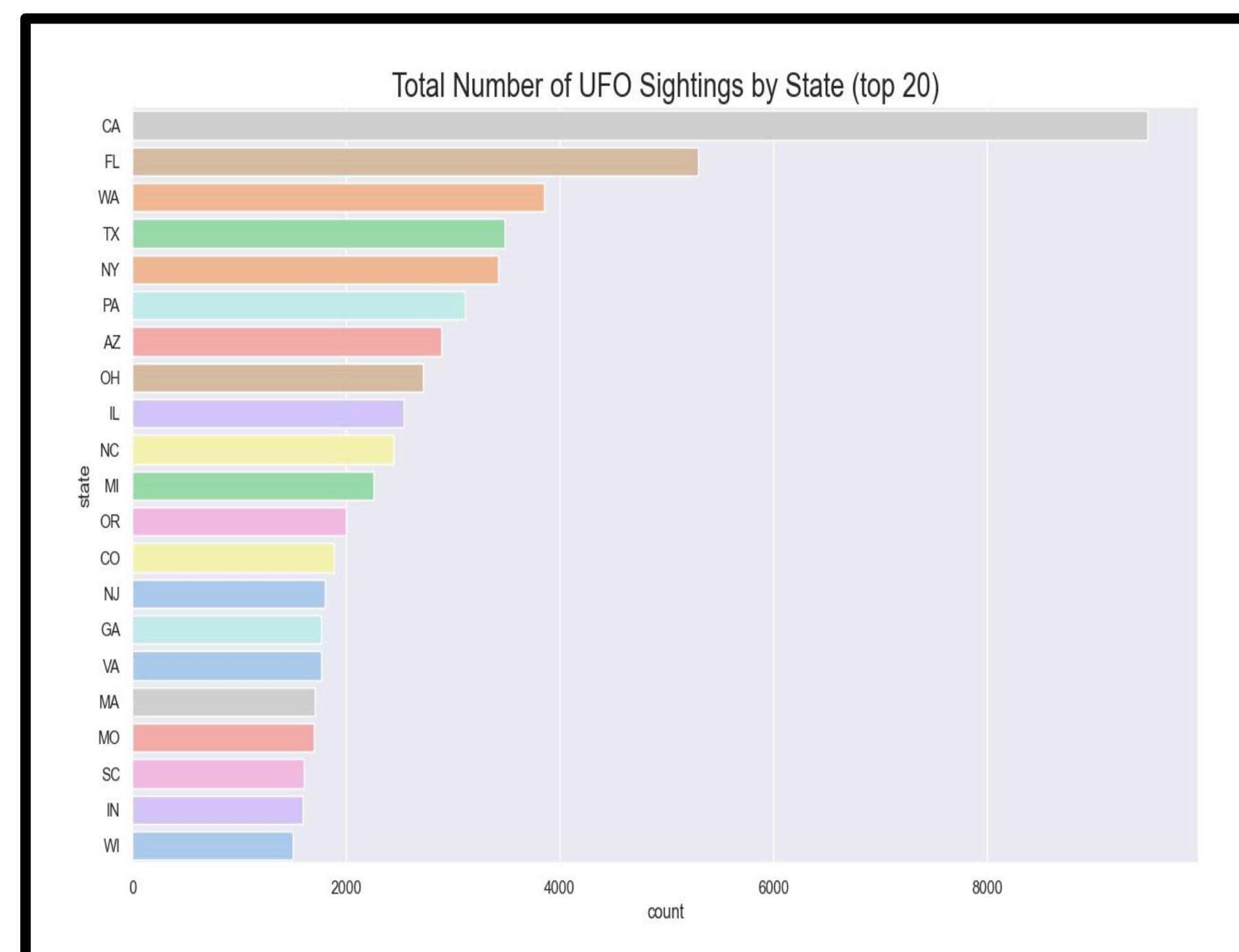


What I Conclude From My Data Science Analysis ?

The UFO Sightings dataset from Kaggle provided fascinating insights into trends and patterns over several decades. By analyzing this data using data science, I uncovered two key findings that highlight how technology and modern advancements have influenced reported UFO sightings.

- **Impact of Cell Phones with Cameras and Social Media:**
In 2004, there were approximately 200 UFO sightings reported in the United States. By 2014, this number had skyrocketed to nearly 9,000. This dramatic increase coincides with the rapid onset of smartphones equipped with cameras and the rise of social media platforms. These tools made it easier for individuals to capture, share, and discuss unexplained aerial phenomena, leading to a significant surge in documented sightings.
- **Pilot-Reported Sightings and Starlink Satellites:**
A subset of the data focused on sightings reported by pilots revealed over 200 of such reports, beginning in 1954. Notably, more than 90% of these reports occurred between 2021 and 2024, a period that aligns with the rapid deployment of SpaceX's Starlink satellites. With over 8,400 Starlink satellites launched since 2020, many pilot sightings were likely due to numerous satellites rather than unidentified phenomena.

These findings demonstrate how technological advances and modern infrastructure have played pivotal roles in shaping UFO sighting trends. This project highlights the importance of data science in interpreting data.



NUFORC UFO Sighting 151739

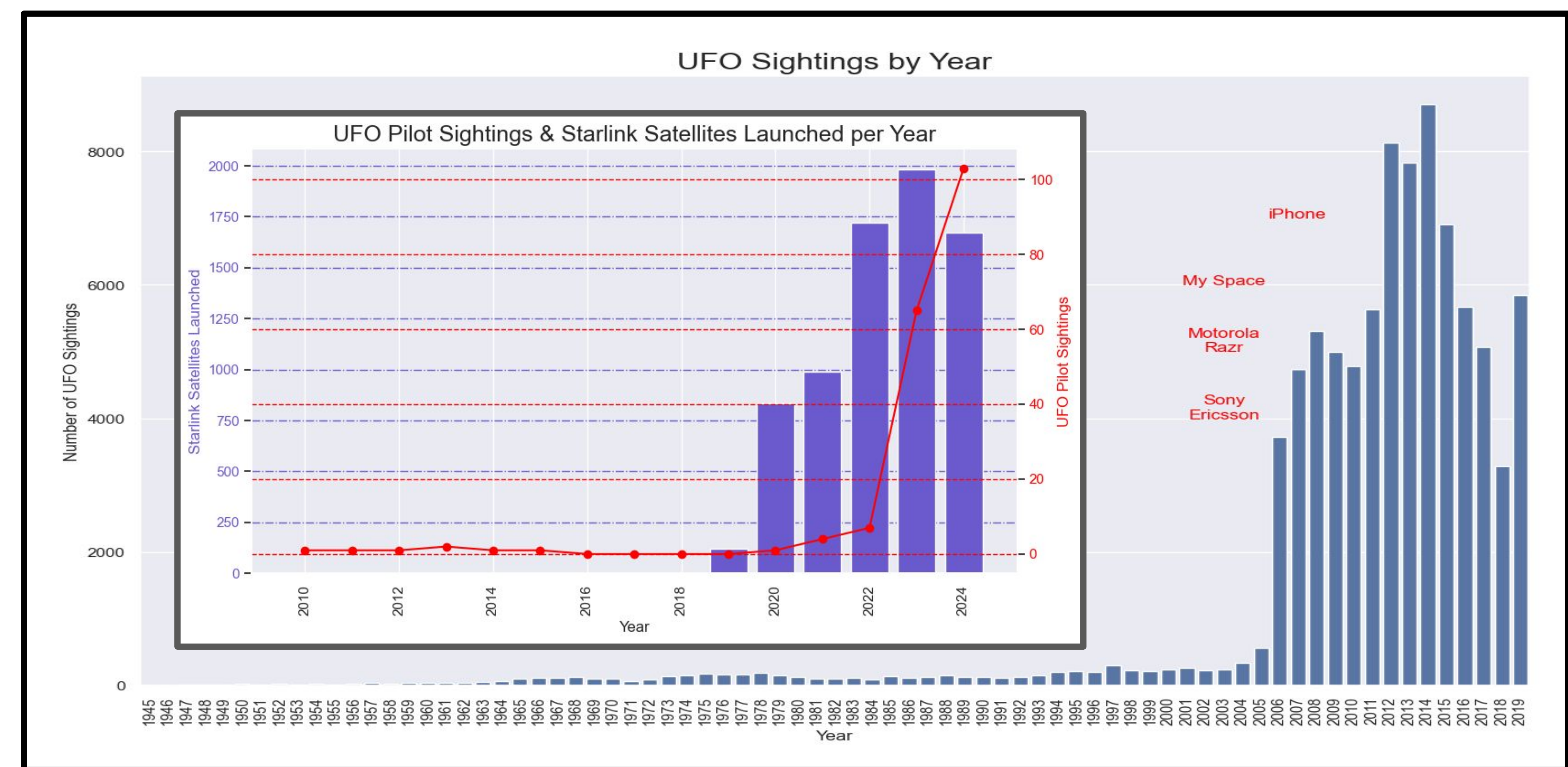
Occurred: 2019-12-12 18:43 Local
Reported: 2019-12-19 19:19 Pacific
Duration: 5 seconds
Number of observers: 2

Location: Chester, VA, USA

Shape: Light
Characteristics: Lights on object, Aura or haze around object,
Changed Color

My wife was driving southeast on a fairly populated main side road, it was dark outside at about 6:43pm. And my wife exclaimed "falling star baby look quick!" When I looked up I saw not a falling star but a bright ball of light , one that was closer than any shooting star I have ever seen, it had a blue glow changing into green colors of light as it fell from the sky. It fell as if falling from an invisible opening in the sky... the night was a crystal clear night sky so no clouds or precipitation to obstruct our view and the object was closer than any I have ever witnessed before. The way the object fell was too slow to be a meteor or falling star, also noting that there was no "light trail" following behind the object as it fell. We watched it fall for about 5 seconds before it disappeared into the dark night sky somewhere close to the earth surface. It was the strangest light; object; ufo... I have encountered and felt a duty to report it.

<https://nuforc.org/sighting/?id=151739>



UFO Dataset Schema

Summary

My wife was driving southeast on a fairly populated main state road, it was dark outside at about 6:43pm. And my wife exclaimed" falling star baby look quick!" When I looked up I saw not a falling star but a bright ball of light , one that was closer than any shooting star I have ever seen, it had a blue glow changing into green colors of light as it fell from the sky. It fell as if falling from an invisible opening in the sky... the night was a crystal clear night sky so no clouds or precipitation to obstruct our view and the object was closer than any I have ever witnessed before. The way the object fell was too slow to be a meteor or falling star, also noting that there was no "light trail" following behind the object as it fell. We watched it fall for about 5 seconds before it disappeared into the dark night sky somewhere close to the earth surface. It was the strangest light; object; ufo... I have encountered and felt a duty to report it.

City	Chester
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State	VA
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Shape	Light

Duration	5 secs

01/10/10	01/10/10

Date	12/12/20
------	----------

References

1. Kaggle UFO Dataset - UFO Sightings (Approx. 90,000)
2. National UFO Reporting Center, Davenport, WA
3. The Early Years of NUFORC
4. 3D World Map - UFO Sightings (National UFO Reporting Center, Davenport, WA)
5. Project Blue Book: FBI Vault
6. Project Blue Book, Complete Status Reports - PDF (707 Pages)
7. Military Records Research > Air Force Records > Project Blue Book - Unidentified Flying Objects
8. Generating WordClouds in Python
9. Create Fancy WordClouds in Python Tutorial
10. Unidentified Flying Objects and Air Force Project Blue Book
11. NUFORC - Pilot Data

Code Sample for - UFO Sightings by Year - Chart Above

```

1 # Assuming df_mod is your DataFrame and 'date' is a datetime column
2 df_mod['year'] = pd.to_datetime(df_mod['date']).dt.year # Extract the year from the date
3 df_mod['date'] = pd.to_datetime(df_mod['date'])
4 start_year = 1945
5
6 df_temp2 = df_mod[df_mod['date'] >= str(start_year) + '-01-01']
7
8 # Count the number of sightings per year
9 sightings_per_year = df_temp2['year'].value_counts().sort_index()
10 sightings_per_year.index = sightings_per_year.index.astype(int)
11
12 # Plot the bar chart
13 sns.set_theme(style='darkgrid')
14 plt.figure(figsize=(16, 9.5))
15
16 # Plot using barplot
17 sns.barplot(x=sightings_per_year.index, y=sightings_per_year.values)
18
19 plt.title('UFO Sightings by Year', fontdict={'fontsize': 20})
20 plt.xlabel('Year')
21 plt.ylabel('Number of UFO Sightings')
22 plt.xticks(rotation=90)
23
24 # Test putting text on the chart
25 plt.text(2003-start_year,4000, 'Sony\nEricsson', fontsize=12, color='red', ha='center')
26 plt.text(2003-start_year,5000, 'Motorola\nRazr', fontsize=12, color='red', ha='center')
27 plt.text(2003-start_year,6000, 'My Space', fontsize=12, color='red', ha='center')
28 plt.text(2007-start_year,7000, 'iPhone', fontsize=12, color='red', ha='center')
29
30 # Show the plot
31 plt.show()

```

