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Take a Walk into the Art Of Dark Sky Photography

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“Do not look at stars as bright spots only. Try to take in the vastness of the universe.”

Maria Mitchell, Astronomer

My First Dark Sky Photography Experience

After 45 minutes of driving into the desert near Phoenix, AZ….

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Ever Wanted To Take Photos Like This?

In this session you will learn how it is done and how Splunk can help you with it!

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What You Will Learn In This Session…

Foundations to our visualizations

"500 – This is not Sparta"

- *What is the 500 rule*

"Dude, where is the milky way?"

- *Astronomy basics*

"Light pollution"

- *Save a dolphin*

"Use Splunk for this … really?"

- *Adding everything onto the Splunk platform to get the perfect dark sky shot*

To help you take sharper, clearer photographs

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Getting The Basics Right

The 500 rule, other Astronomy basics, and light pollution

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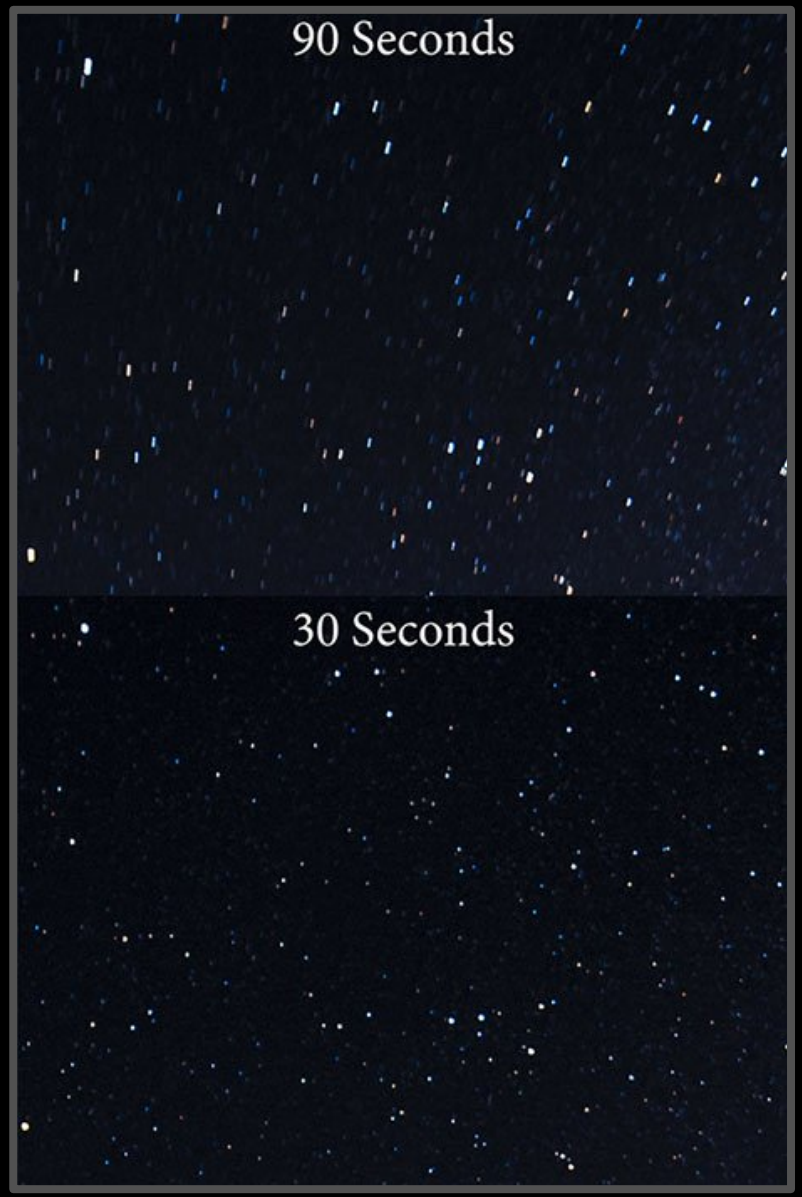
500 Rule

In the field rule of thumb

- 500 divided by the focal length of your lens = The longest exposure (in seconds) before stars start to “trail”
- Let’s say you’re taking a shot with a 24mm lens on a full frame camera.
  - 500 / 24 = 21 seconds, which you can round to 20 seconds.



Dude, Where Is The Milky Way?

Look up!

- Best time to observe the bright galactic center of the Milky Way?
  - From about mid-March through mid-October
- Use a planisphere
- Major constellations along the Milky Way Galactic Plane:
  - Scorpius
  - Sagittarius
  - The Summer Triangle
  - Cassiopeia
  - Crux or the Southern Cross
  - Orion
- There are apps for that…

Pukerua Bay, NZ
July 2015, Canon 5D

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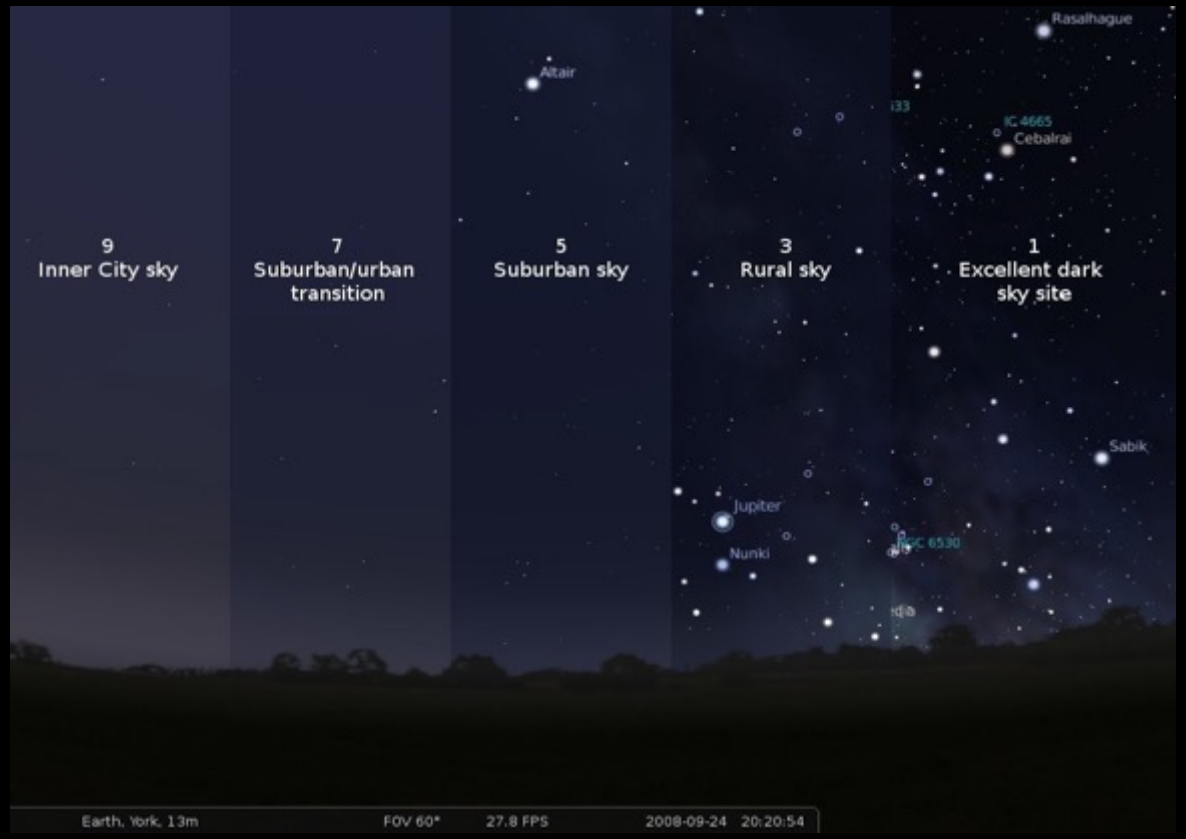
Light Pollution?

Get out of town!

- Bortle Dark-Sky Scale
- The brighter the background light, the dimmer the sky
- Natural light pollution caused by volcanoes, thunderstorms or other natural sources.



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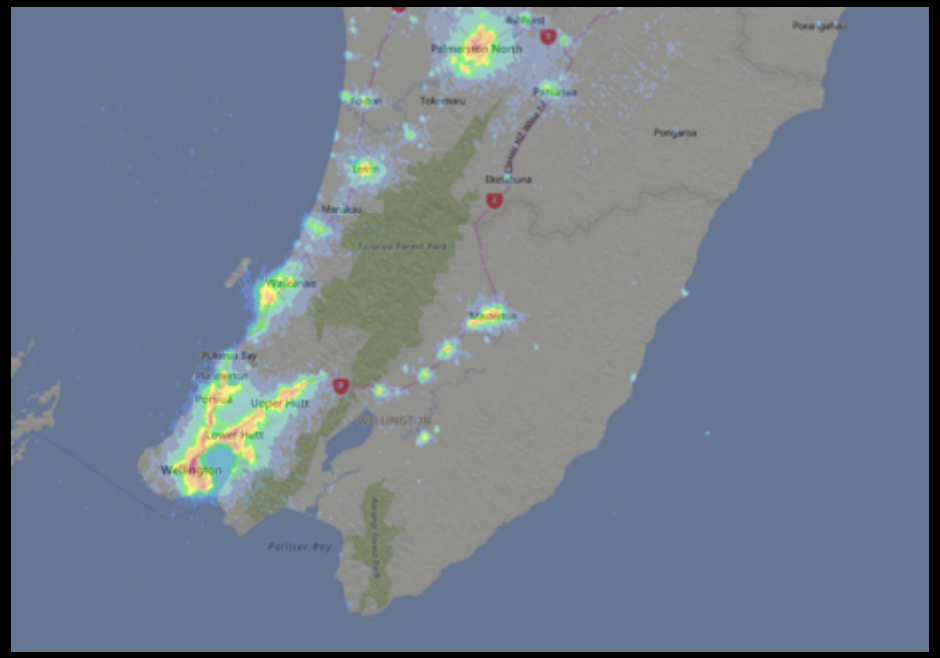
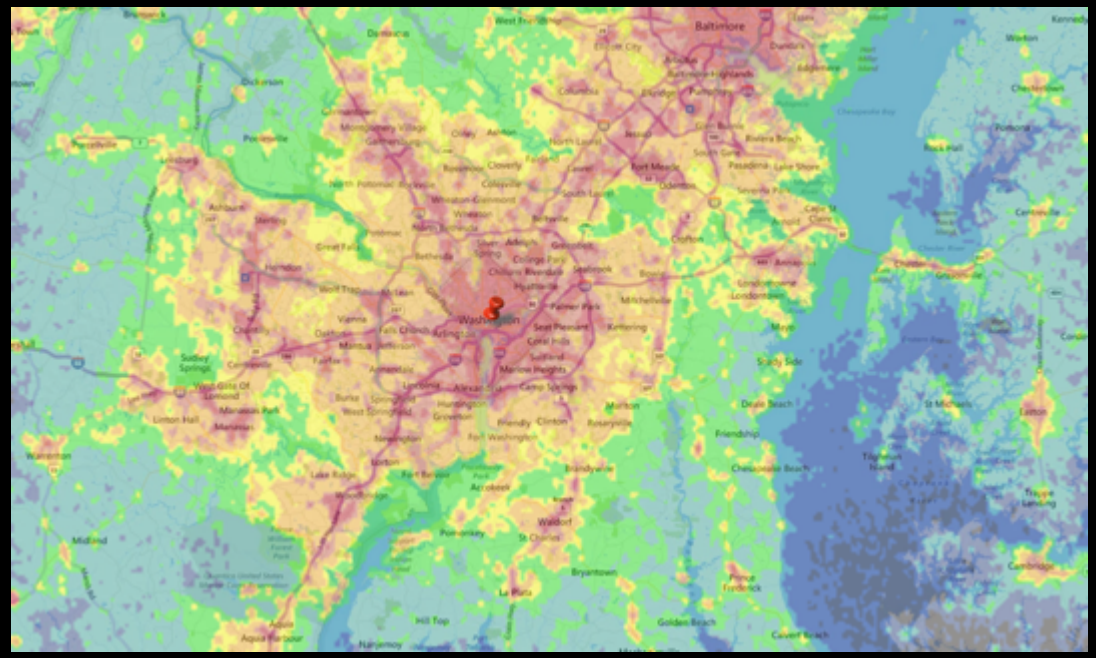
Spot The Difference

We must be using candles in New Zealand…





- New Zealand's Capital City
  - Wellington
  - Population 398,000
    - 2,300 people per square mile

- United States of America Capital City
  - Washington D.C.
  - Population 672,228
    - 11,000 people per square mile

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Where Is the Worst Natural Light Pollution on Earth?

Antarctica, due to snow reflection and the auroras

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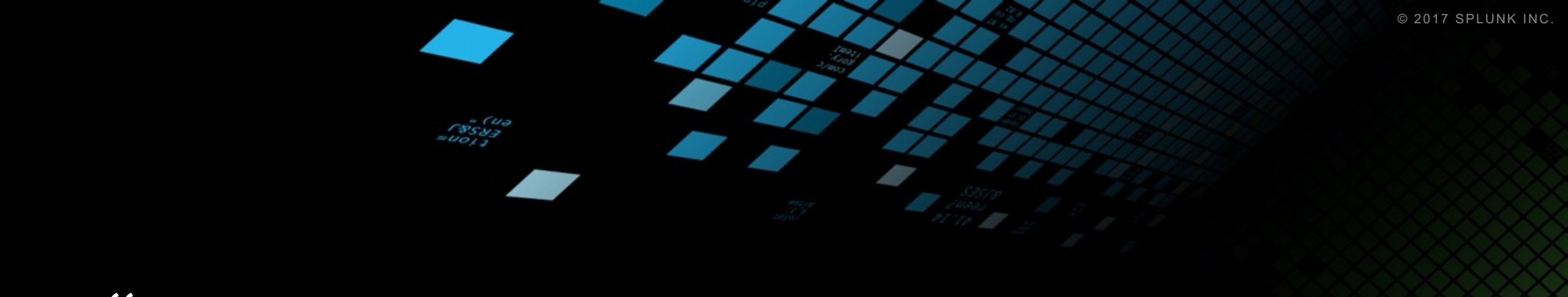
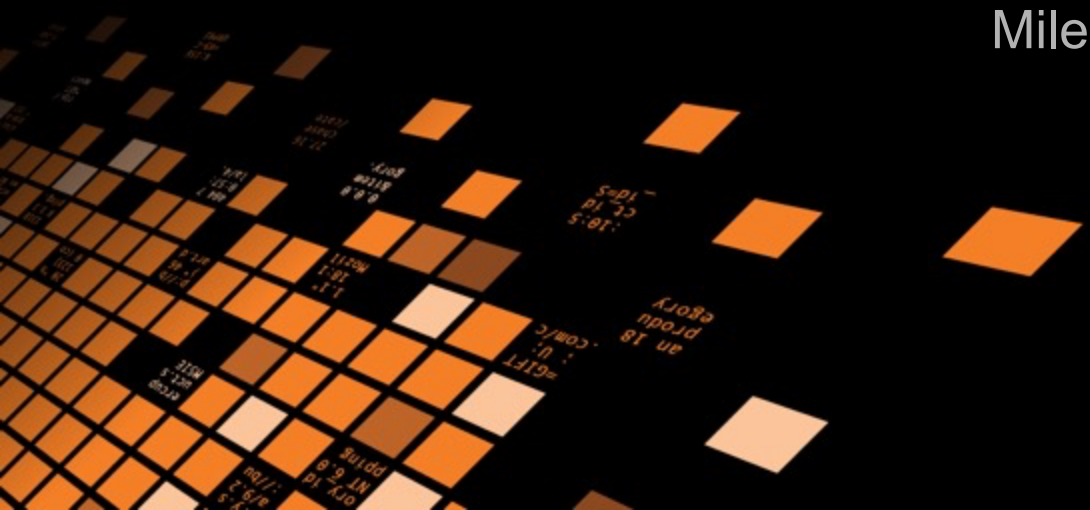


“Astronomers, like burglars and jazz musicians, operate best at night.”

Miles Kington, Journalist



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Sound Complicated?

Let Splunk Do The Job For You!

Getting all the data into the Splunk platform and find the perfect location

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Where Does It All Come From? (Credits)

Standing on the shoulders of giants

Moon Phases

The United States Naval Observatory (USNO)

Google Directions

Navigation to the darkest spot

Light Pollution

NASA and Magic

Weather

OpenWeather API

Light Pollution – Not as Simple as It Seems…

NASA does not provide raw light pollution data

- Downloaded the TIFF files from NASA
- Used the `R` programming language to extract the light pollution data from the TIFF images into a 91,000,000 (yes 91 million) line lookup table

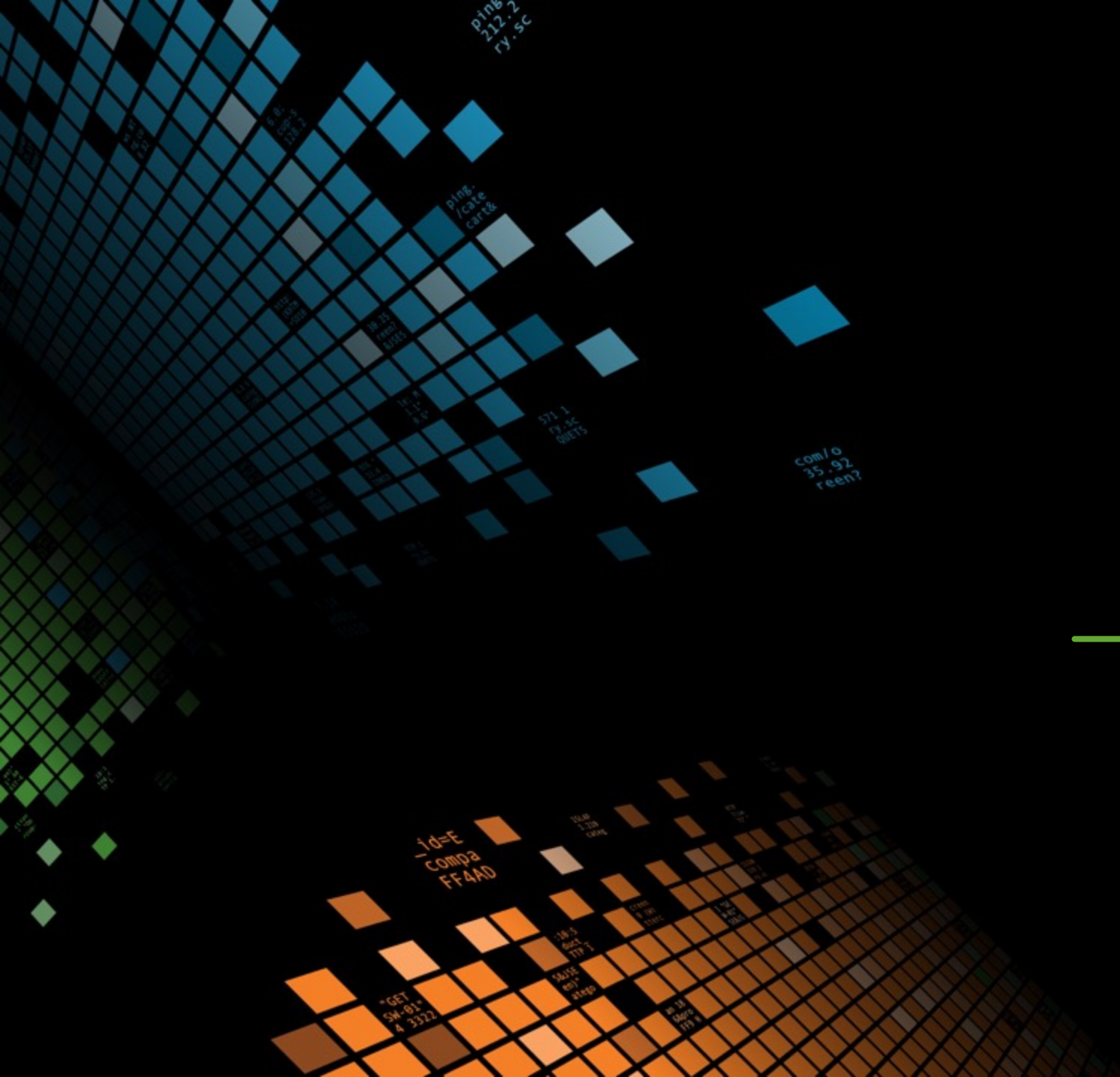
4 days later……..

- KV store exploded, so built accelerated data models so `tstats` can do all the work
- Additional benefit of the TIFF files
  - Used the `gdal` library to inject the geo mapping data into the TIFF we then reused the TIFF skins as the map tiles using `tilemill` to convert them to the leaflet format Splunk loves

API on an Interval? Not For Us!!

Why make it easy when you can create a custom search command!!

- Its called “get” and is used as `` `| get me=moon` `` or `` `| get me=weather` ``
- Using this command, on dashboard load, a live call to the appropriate API is made, getting the data for the view, depending on location or date



Splunk Demo

Presented by MuS and his Fez

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Key Takeaways

From us to you

1. Learned some Astro photography basics like the 500 rule, what you need to take a good dark sky photo, and how it works with the Splunk platform.

2. Splunk is amazing and you can do anything with it – the question is *how* not *if*

3. Get in contact and get the app being demo'd – 9GB too big for Splunkbase directly

4. Check www.darksky.photo for more info

Thank You

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