

# POWER OF STORY

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Compelling Data + Story + Telling

*Every **presenter** has the potential to be great; every **presentation** is high stakes; and every **audience** deserves the absolute best.*




# Engage Thru Story



## Give Voice to Data: the Power of Story

A series of TED-like talks from three different Agencies: SEC, GSA and NASA. They showcased stories around the importance of data in making better decisions. The day was sponsored by the Performance Improvement Council.

by  wykipite 7 days ago 114 Views ▾

# Earth System Science



Land



Ocean



Atmosphere




Ice



Changing Planet





A satellite view of Earth at night, showing city lights and a prominent bright rectangular area. The image captures the curvature of the planet, with a dark blue ocean and a thin layer of white clouds. A large, bright, rectangular area of light is visible in the lower-left quadrant, likely representing a major city or industrial zone. Other smaller, scattered lights are visible across the landmasses. The text is overlaid on the right side of the image, set against a dark, semi-transparent background.

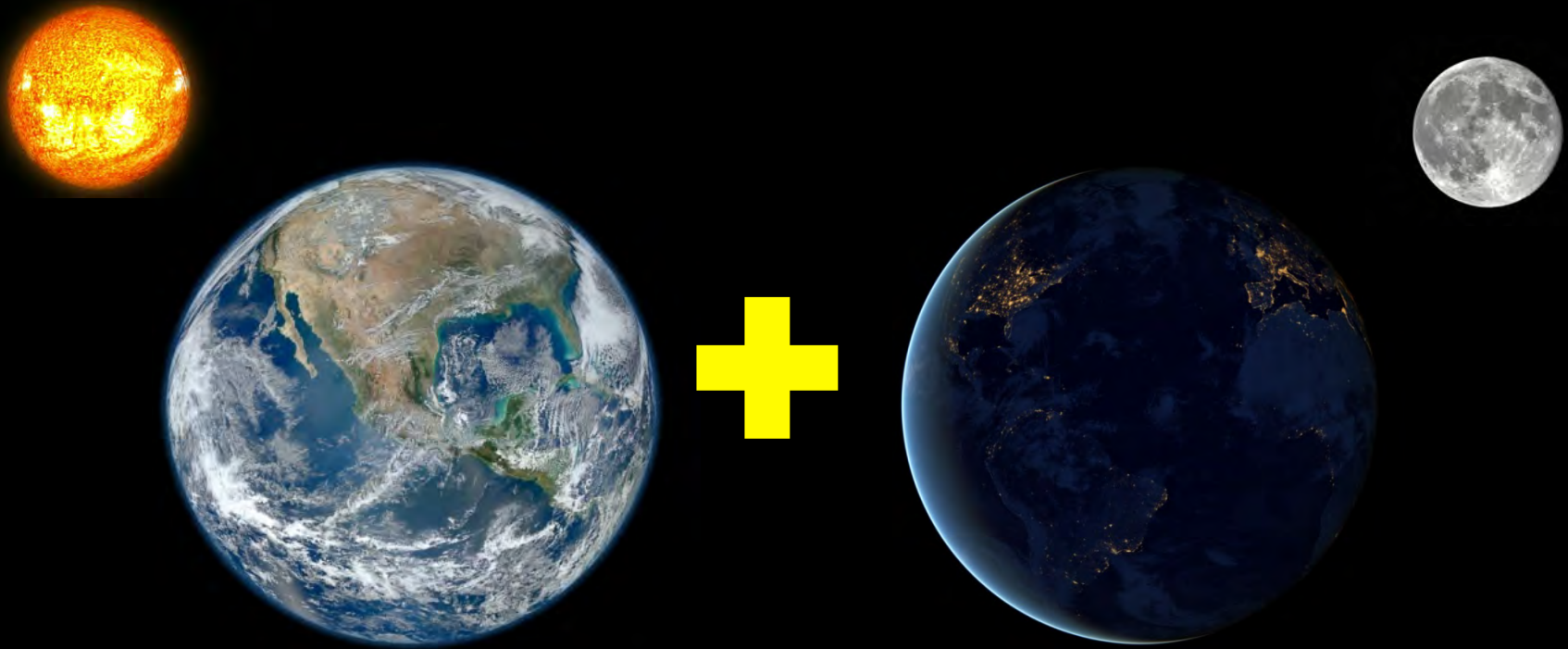
**What makes a  
community  
meaningfully  
similar or different  
is not just its  
landscape, but  
also its people.**



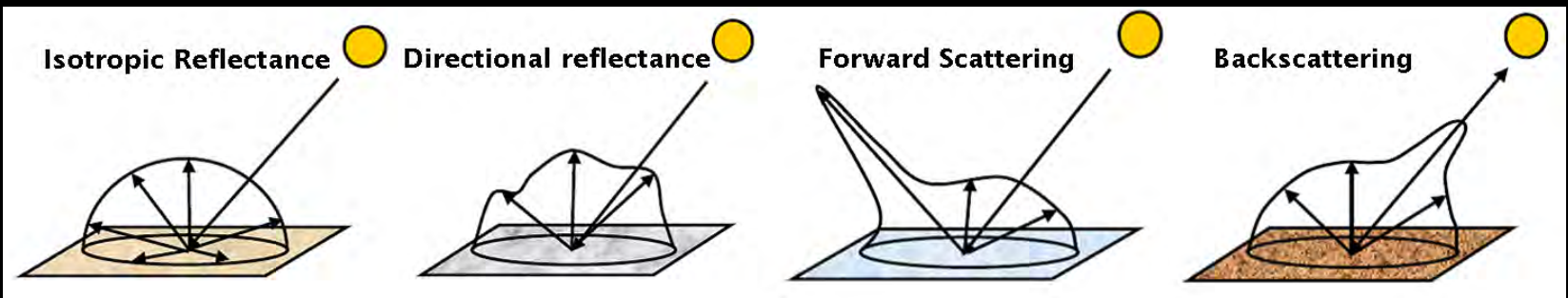
# Holiday Season in Puerto Rico



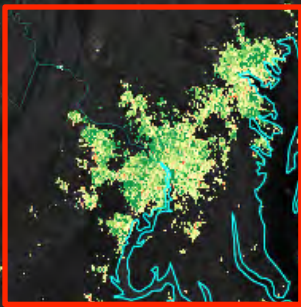
# The Solution: Combine daytime and nighttime measurements...



...with well-established physical principles.



**Baltimore – Washington  
Metro Area**



**Richmond**

**Portsmouth**

**Greensboro**

**Raleigh**

**Charlotte**

**Greenville**

**Holiday Lighting**



less

equal

more





**You can see the glow from down the street.  
Now NASA can see it from space.**



**EARTH *RIGHT* NOW**

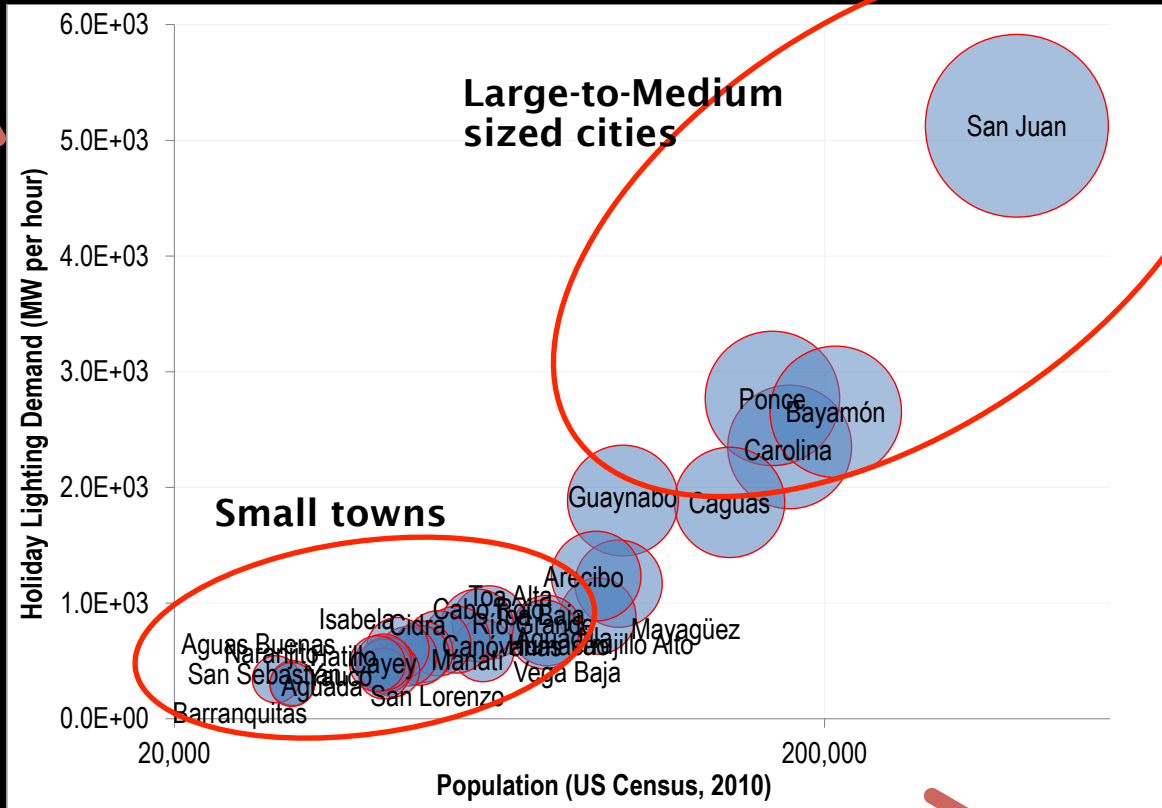
[www.nasa.gov/earthrightnow](http://www.nasa.gov/earthrightnow)





# Holiday Season in Puerto Rico

More Nighttime Lights



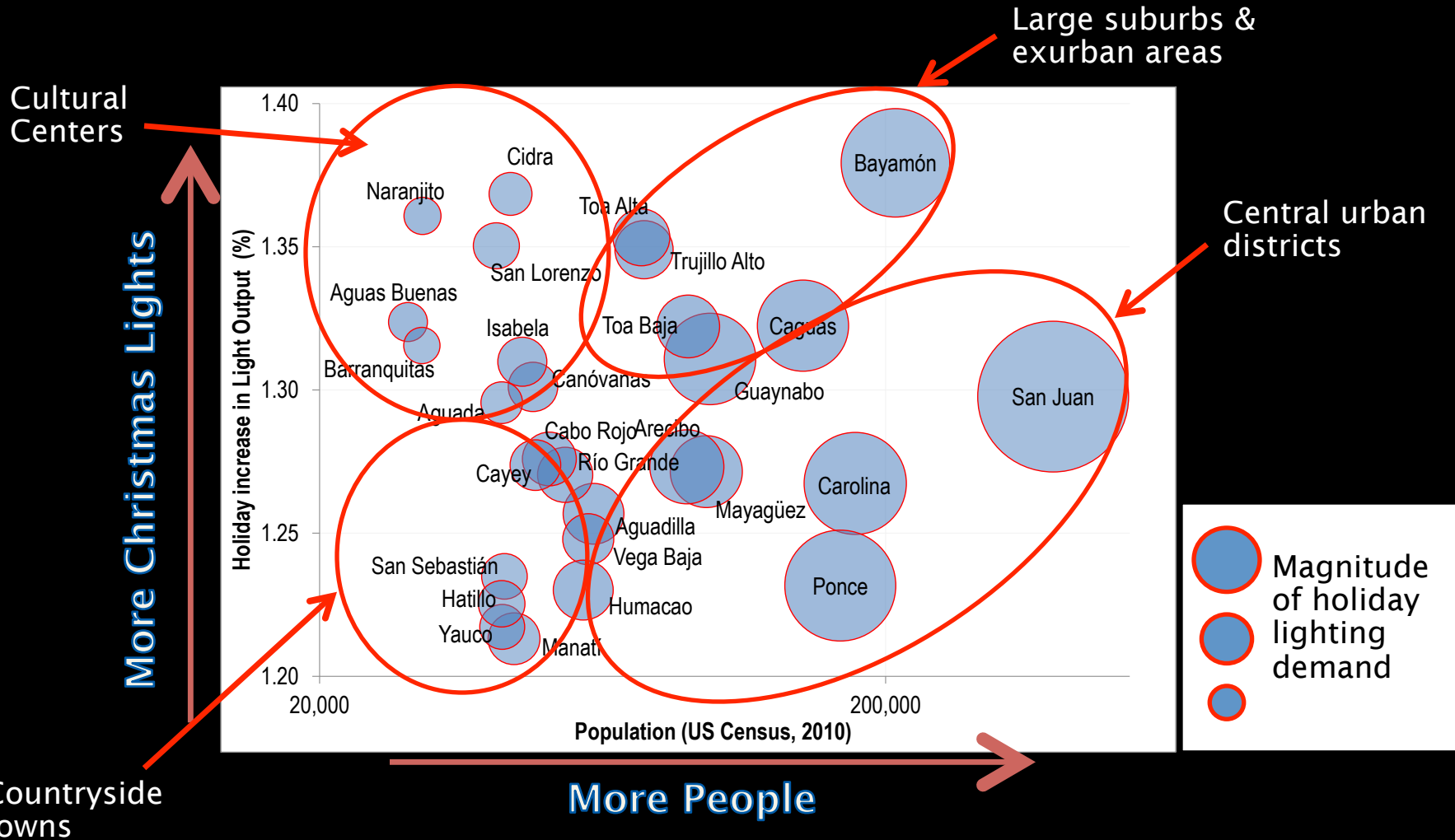
Magnitude of lighting demand

More People





# Holiday Season in Puerto Rico





**The Holy Month of Ramadan**

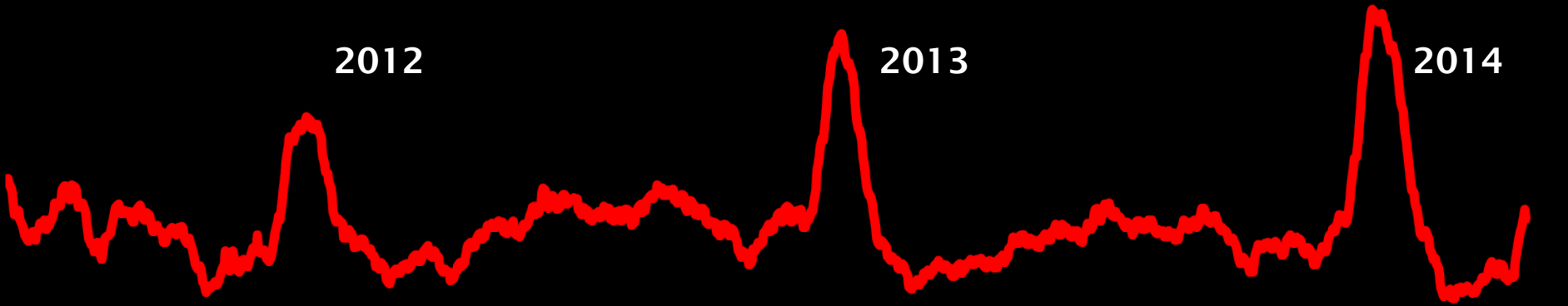
# Jeddah, Saudi Arabia



2012

2013

2014



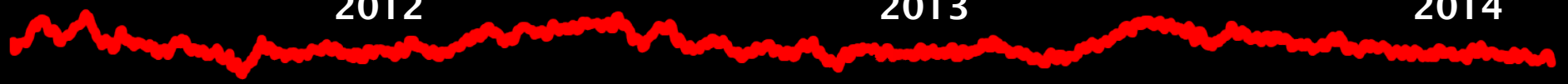
# Tel Aviv, Israel

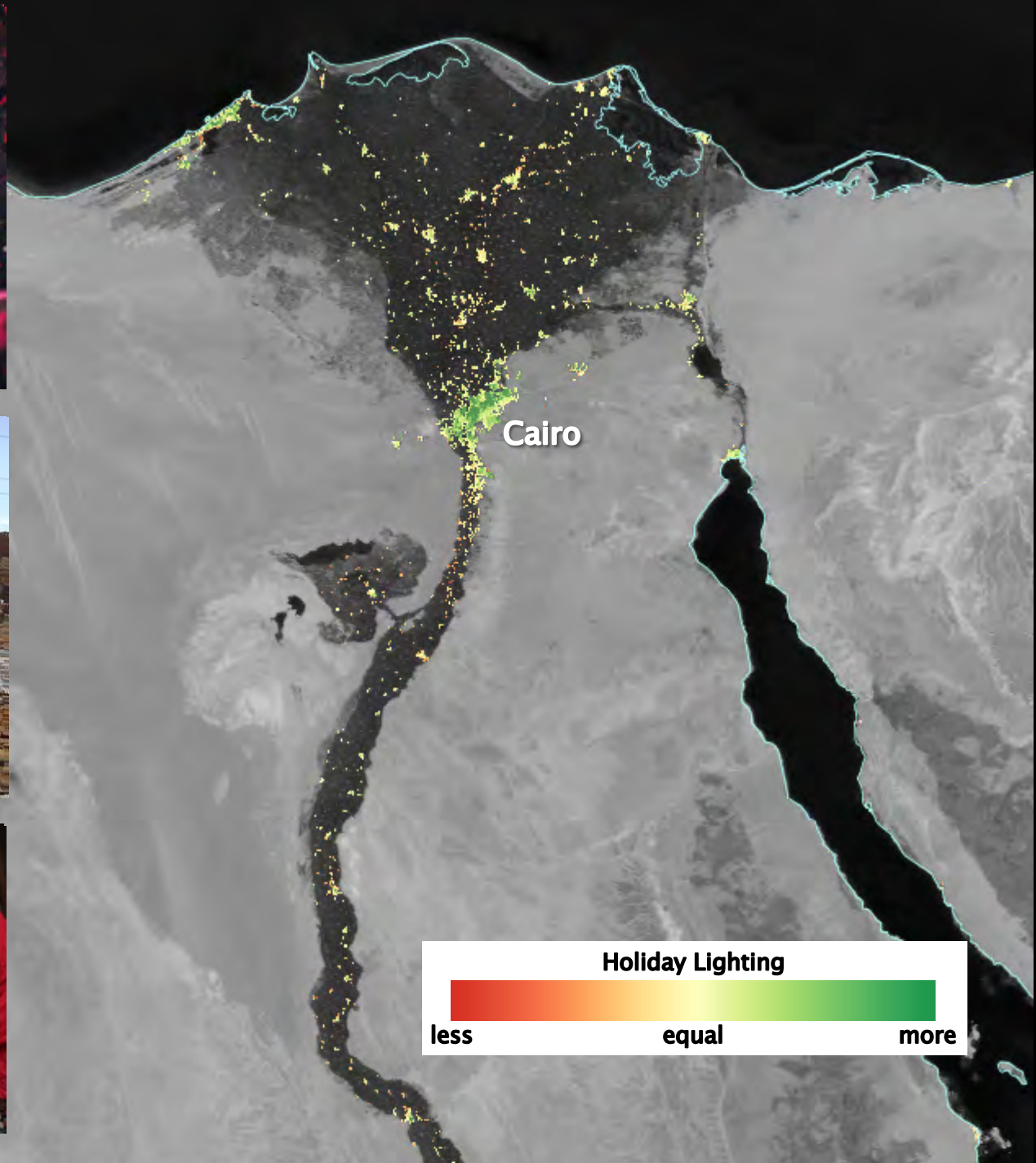


2012

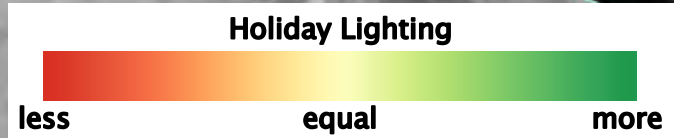
2013

2014





Cairo





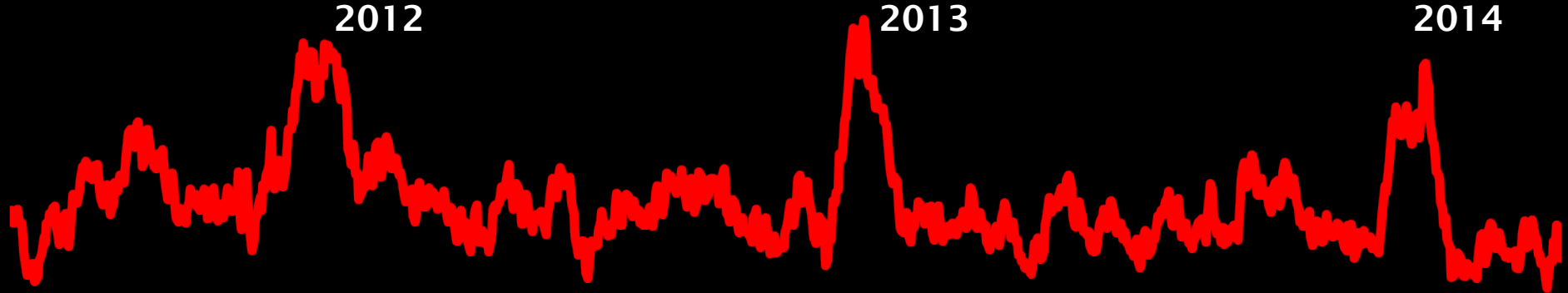
# Cairo, Egypt



2012

2013

2014



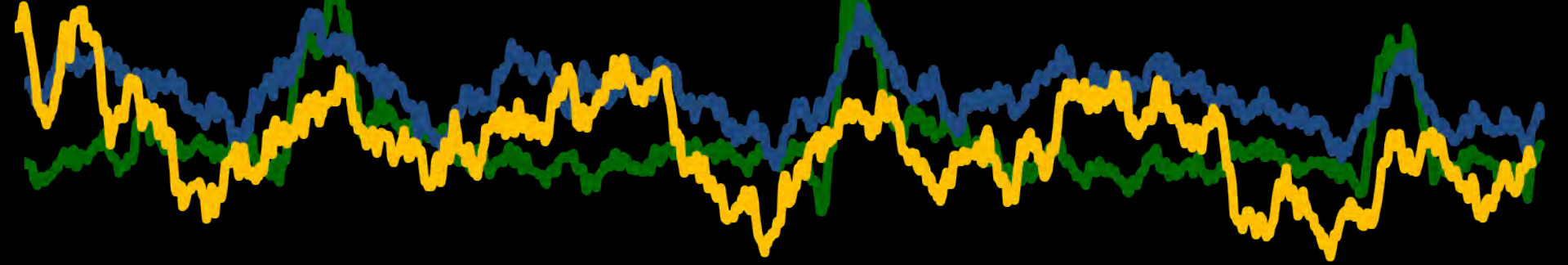
# Cairo District, Sharqiya District, and Assiut District



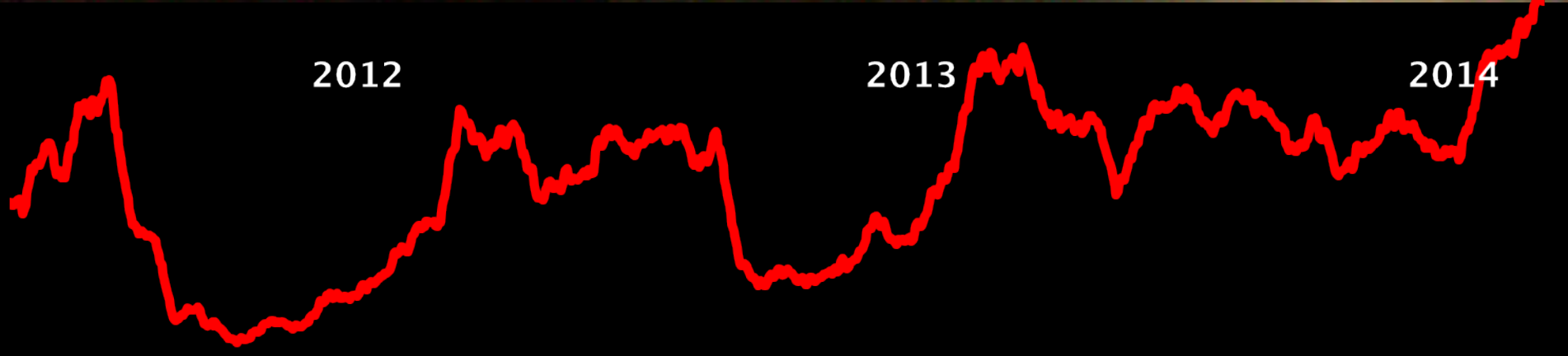
2012

2013

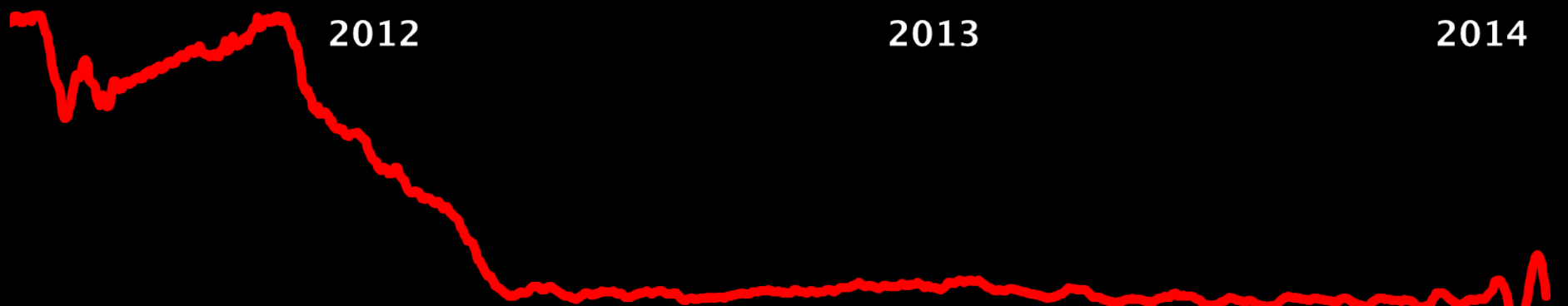
2014



Basrah, Iraq



# Aleppo, Syria





Why is it important ?





**Sustainable  
energy for all.**

# Individual

# Neighborhood

**REDUCE YOUR CARBON FOOTPRINT**

*shop local*



*unplug!*



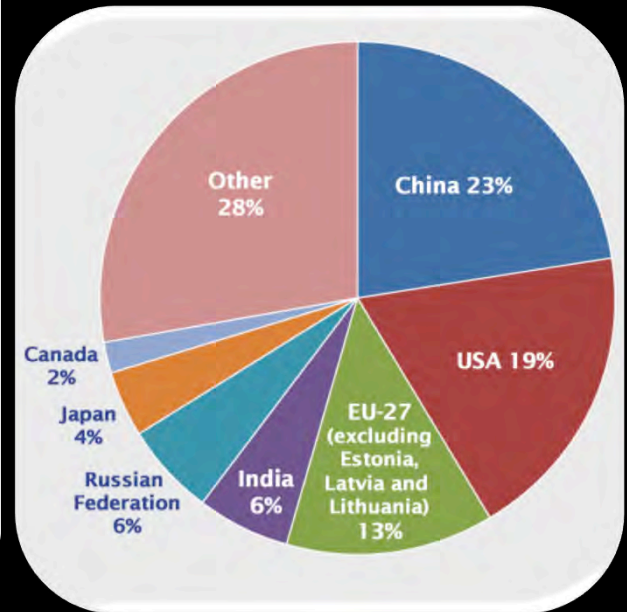
*fluorescent lights*



*reusable water bottles*



**ENERGY EFFICIENT SHADES**



# Global

## **Thanks to NASA's SIF Fund. For more info:**

- Román and Stokes (2015). Holidays in lights: Tracking cultural patterns in demand for energy services. AGU Earth's Future Journal [Accepted].

## **+ Innovative research that made ours possible:**

- Miller and Turner (2009), A Dynamic Lunar Spectral Irradiance Data Set for VIIRS DNB Nighttime Environmental Applications, IEEE-TGRS.
- Zhang et al., (2013), The Vegetation Adjusted NTL Urban Index: A new approach to reduce saturation and increase variation in nighttime luminosity, RSE.
- Johnson, et al., (2013), Preliminary investigations toward nighttime aerosol optical depth retrievals from the VIIRS DNB, AMTD.
- Walther, et al., (2013), The Expected Performance of Cloud Optical and Microphysical Properties derived from Suomi NPP VIIRS DNB Lunar Reflectance, JGR-Atmospheres.
- Cao and Bai (2014), Quantitative Analysis of VIIRS DNB Nightlight Point Source for Light Power Estimation and Stability Monitoring, Remote Sensing.



## **AGU'15 Session Proposal: Emerging Issues in Nighttime Environmental Remote Sensing and Earth System Science Applications**

**Session ID#:** 7530: A new generation of satellite instruments, pioneered by the Visible Infrared Imaging Radiometer Suite (VIIRS) Day/Night Band (DNB), now offer global measurements of nocturnal visible and near-infrared light that are suitable for Earth science and climate studies. These novel low-light measurements have opened doors to a wealth of new and expanded interdisciplinary research topics, including urban sustainability, improved weather forecasting, and enhanced climate data records. We are requesting abstracts in the following topic areas:

- **Fundamental questions and challenges surrounding quantitative nighttime remote sensing;**
- **Novel capabilities, applications, and algorithms involving VIIRS DNB measurements of interest to the research and operational communities;**
- **Stability, accuracy, and calibration of nighttime observations;**
- **Extension of physical models of radiative transfer to characterize the nighttime environment;**
- **Quantitative assessments of diurnal variation in atmospheric, land, cryospheric, and ocean properties;**
- **Observation requirements for characterization of the nighttime environment on future sensors/platforms;**
- **Temporal studies of night light for change detection.**

**Primary Convener:** Miguel O. Román, NASA Goddard Space Flight Center, Greenbelt, MD, United States. **Conveners:** Edward J. Hyer, Naval Research Laboratory, Marine Meteorology Division, Monterey, CA, United States, Steven D Miller, Cooperative Institute for Research in the Atmosphere, Fort Collins, CO, United States and Changyong Cao, NOAA College Park, College Park, MD, United States.