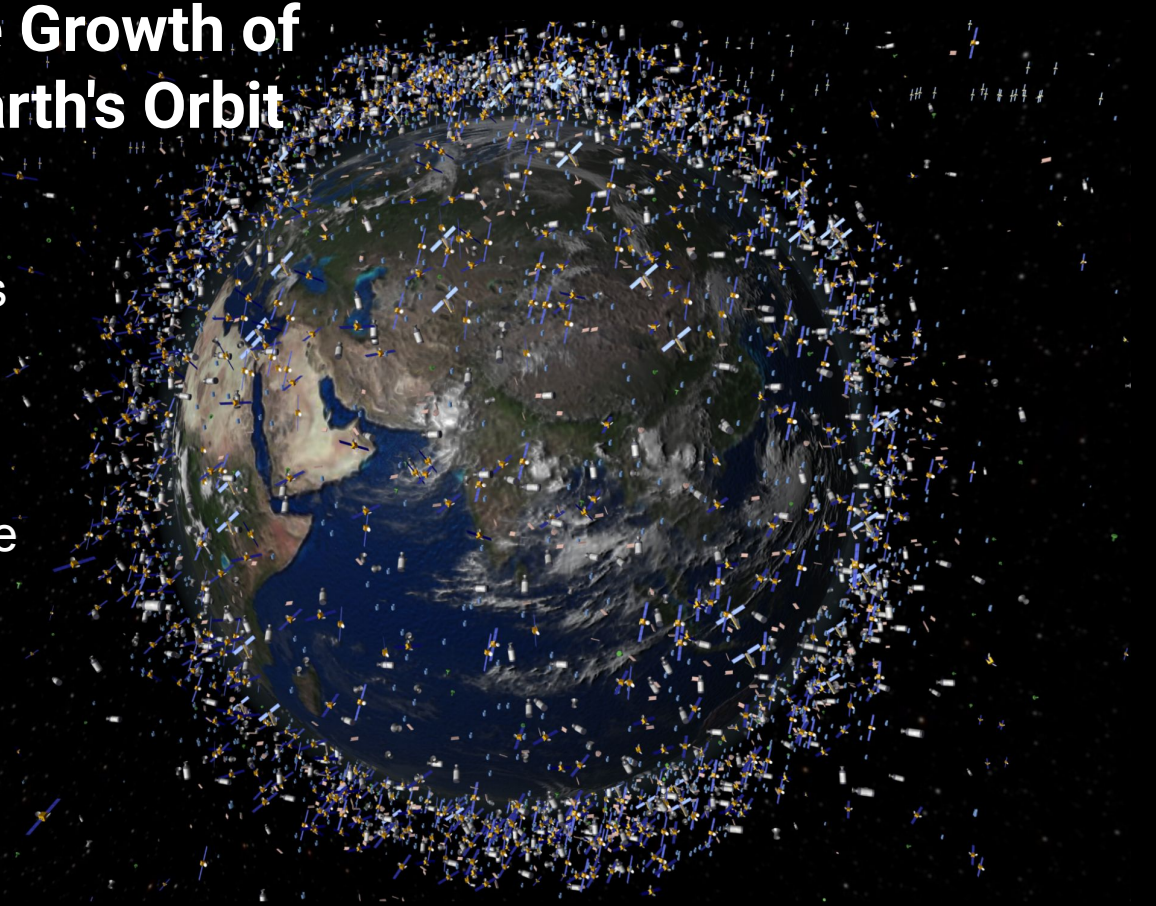

Satellite Journalism
Unveiling the World from Above

Rapid Expansion: The Growth of Active Satellites in Earth's Orbit

- 2017: **1,738** active satellites in orbit

- March 7th 2024, the satellite tracking website “Orbiting Now” lists **9,494** active satellites in various Earth orbits.



A Powerful Storytelling Device

Satellite imagery has become a compelling centrepiece for visual storytelling

Applications

- Before/after
- Geolocation
- Smoking gun
- Verification/reconstruction
- Presence/absence
- Comparison
- Illustration/scale
- Mapping environmental impact
- Mapping infrastructure changes
- Access to inaccessible
- Adding visual element
- And more…

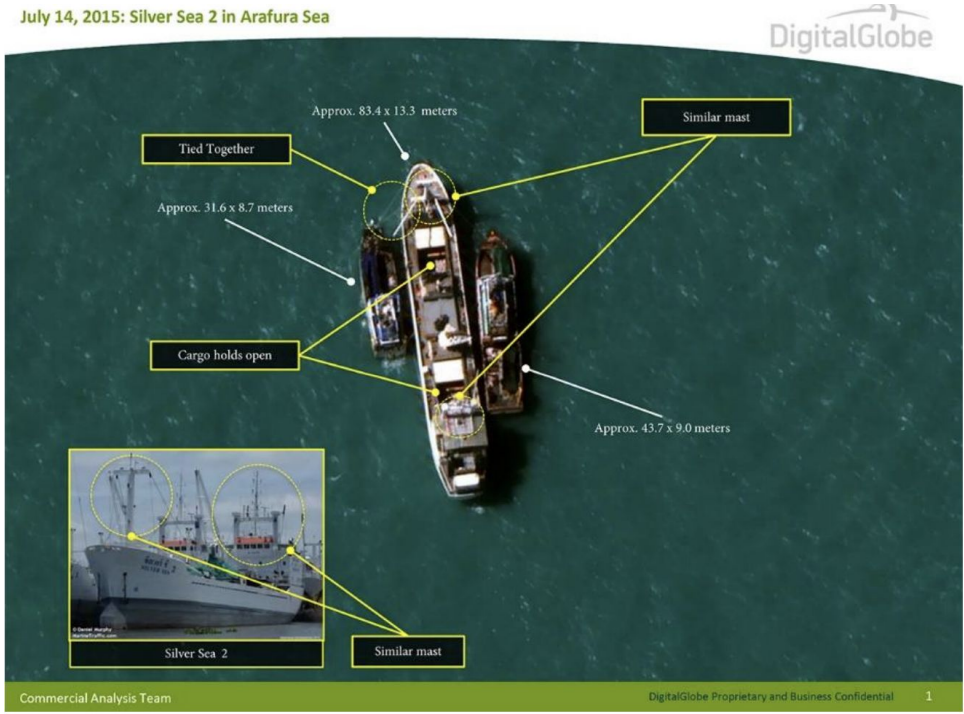
War Zone: Devastation in Syria (Before and After)

Image 4: Liberation of Ramadi from ISIS: Pre and post images show widescale devastation.

Fisherman Slaves: Human Trafficking and the Seafood We Eat *Associated Press and DigitalGlobe Technology*

- Excellent example of fusion between investigative journalism and satellite technology
- Provided visual evidence of widespread slavery in the seafood industry and resulted in the release of 2,000 people held in slave conditions aboard fishing vessels

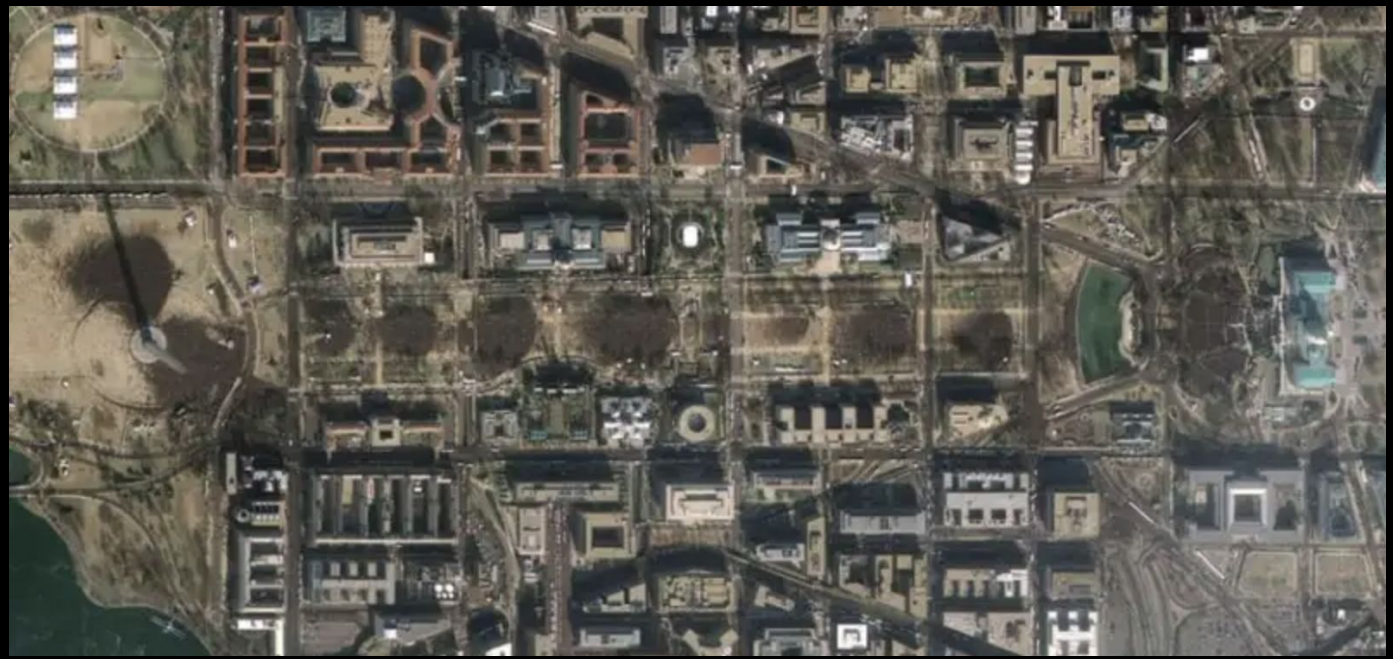
Smoking Gun



The Smoking Gun – DigitalGlobe images refrigerated cargo ship Silver Sea 2 as catch is transhipped from slave fishing boats (Image – DigitalGlobe/AP)

Imagery Not Just For Visualization…

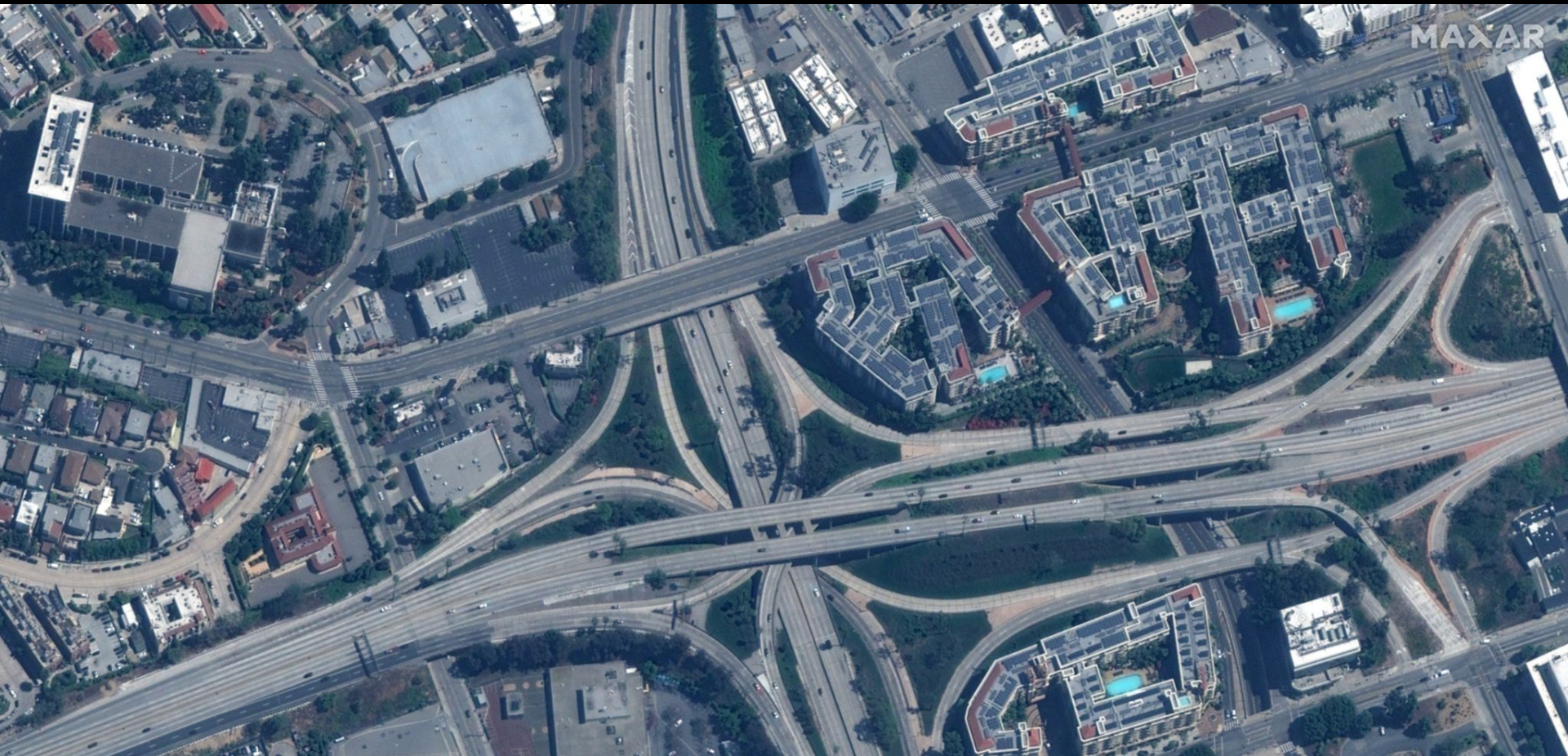
It can also be the primary source of data.



Satellite image used to estimate crowd size at Barack Obama's inauguration in Jan 2009

COVID 19 - Los Angeles, January 2020 (Presence/Absence)

COVID 19 - Los Angeles, March 2020 (Presence/Absence)



Access to inaccessible

DigitalGlobe took this picture of Fukushima nuclear plant 3 minutes after the first explosion on Mar 11, 2011.

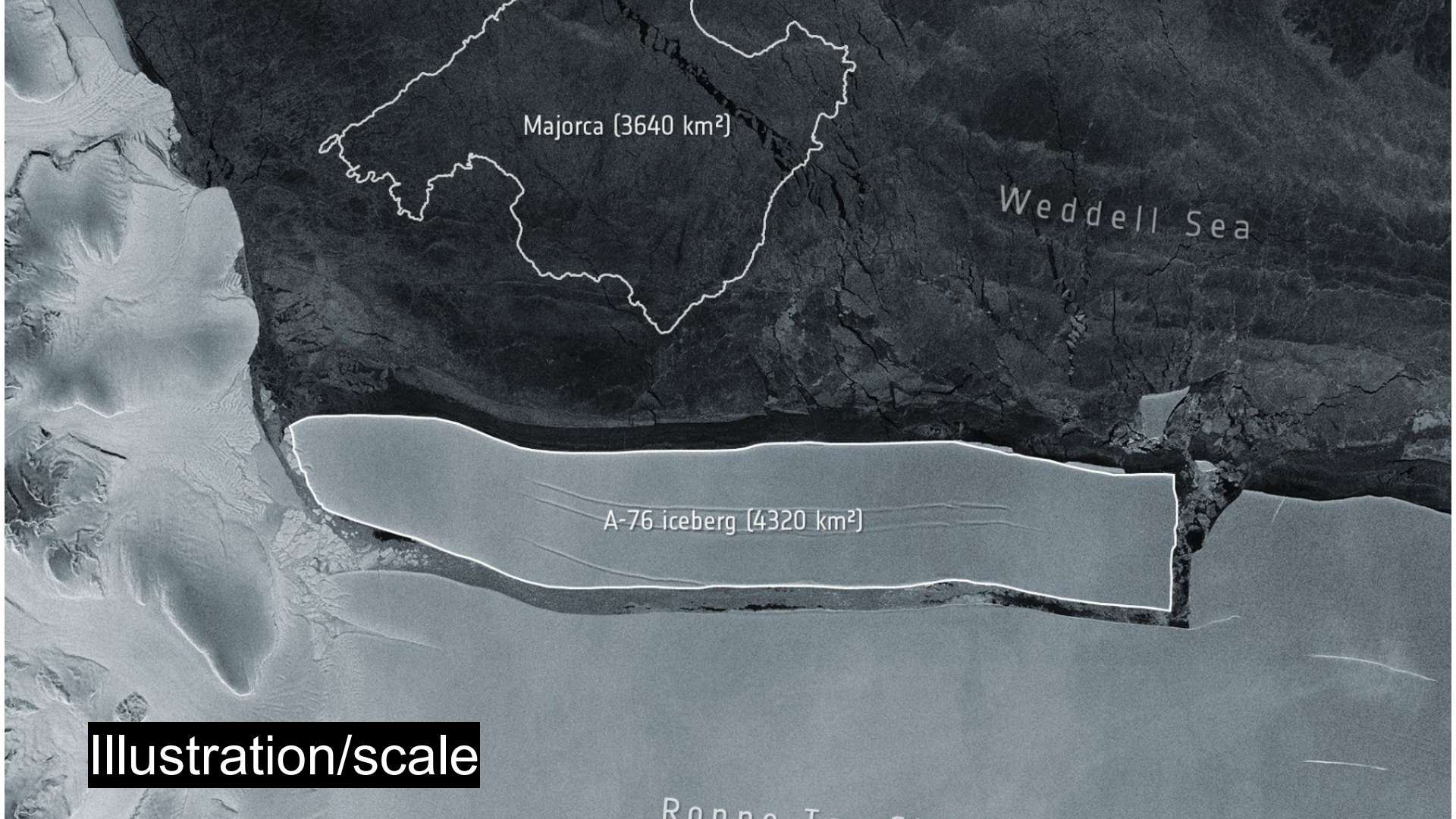
THE ROHINGYA CRISIS

Life in the camps

Image 3: Planet imagery used by Reuters to track Kutupalong and Balukhali extension sites and camps for Rohingya refugees in Bangladesh.

Adding A Visual Element

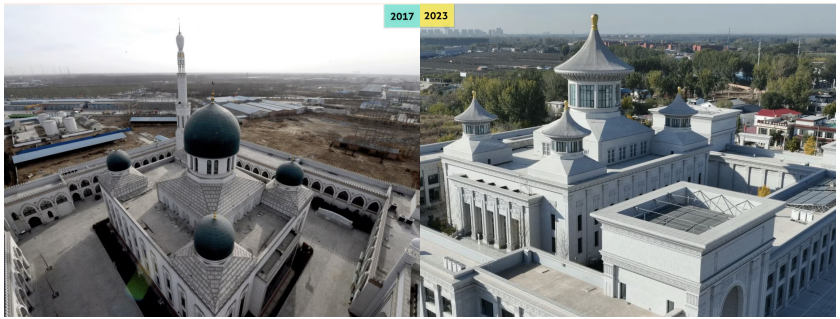
Example: This 9/11 image of the World Trade Centre (Image 7) captured from International Space Station by NASA Astronaut Frank Culbertson — the only American off the planet at that time — shows a plume of smoke coming from the site.



Illustration/scale

ARTICLE

How China is Tearing Down Islam *Financial Times*



Investigative method:

Using satellite data to track mosque sites over 5 years (2018-2023)

Data visualization method:

Presenting before-and-after-style satellite images of mosques to demonstrate qualitative changes in architecture

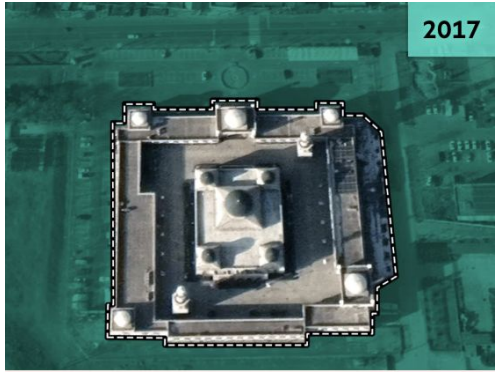
Tracking Infrastructure Changes

ARTICLE

How China is Tearing Down Islam *Financial Times*

Initial information:

- Official government public statements on plans to “modernize mosques” (Five-Year Plan on the Sinicization of Islam)
- Tips from Chinese citizens about the extent to which islamic motifs were being removed from certain mosques



Contribution of satellite journalism

- Able to substantiate reports from citizens
- Attempt to establish the number of sites affected
  - Not possible to establish the pervasiveness of the problem based on individual first-hand accounts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The World's Largest Hidden Picture Puzzle

- Planet pulls 30TB of data daily (nearly 4 million images!) off of ~200 satellites
- Very time and labour intensive to search through this data
- Crowdsourcing has been helpful (e.g., searching for missing Malaysian airlines flight, locating destroyed homes in Darfur)

planet.

One More Way AI Can Help Us Harness One Of The Most Underutilized Datasets In The World

Kevin Weil | March 21, 2023

STORIES

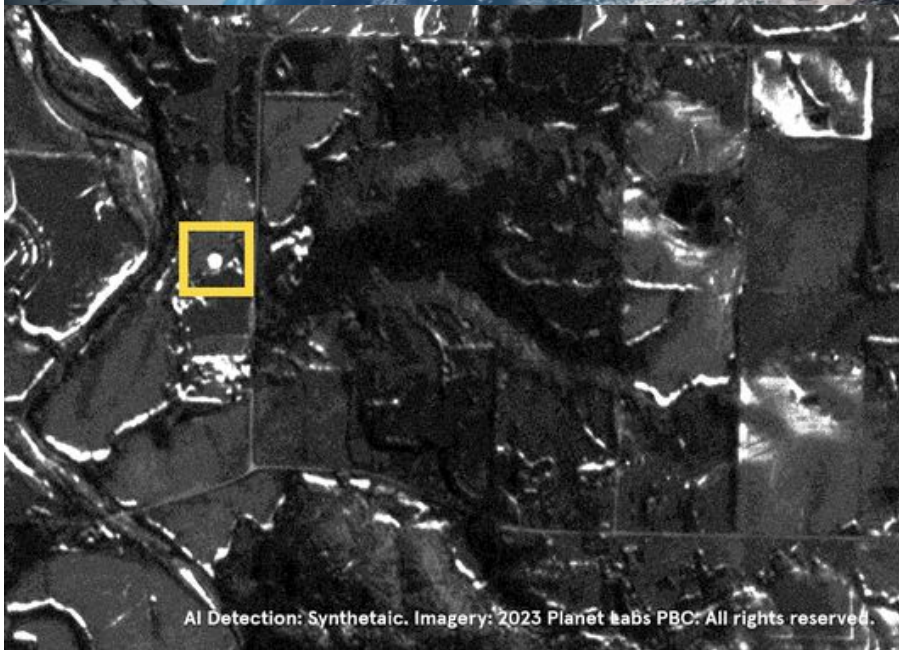
How we tracked the Chinese balloon in satellite data

Satellite data may be one of the most underutilized datasets in the world.

At Planet alone, we have six years of documented history — which means we have over 2,000 images on average for every point on earth's landmass. This dataset at high resolution never existed before Planet came along and created it.

What this dataset means is that you can see a lot of change...if you know where to look.

We're pulling down 30TB of data daily (nearly 4 million images!) off of ~200 satellites, and it would be impossible for humans to look at, consume and derive insights from all of that manually. Some days, it can literally feel like the world's largest hidden picture puzzle.



Free sources of satellite data

- NASA’s Landsat: **longest c**ontinuous global record of the Earth’s surface.
- ESA’s Copernicus Data and Information Services: **largest** space data provider in the world on a free, full and open access basis.
- Google Earth: drawbacks are poor resolution and stitching errors
- Commercial satellite providers like Maxar, Planet, Airbus give some data for free, especially at the times of disasters or for humanitarian causes.

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