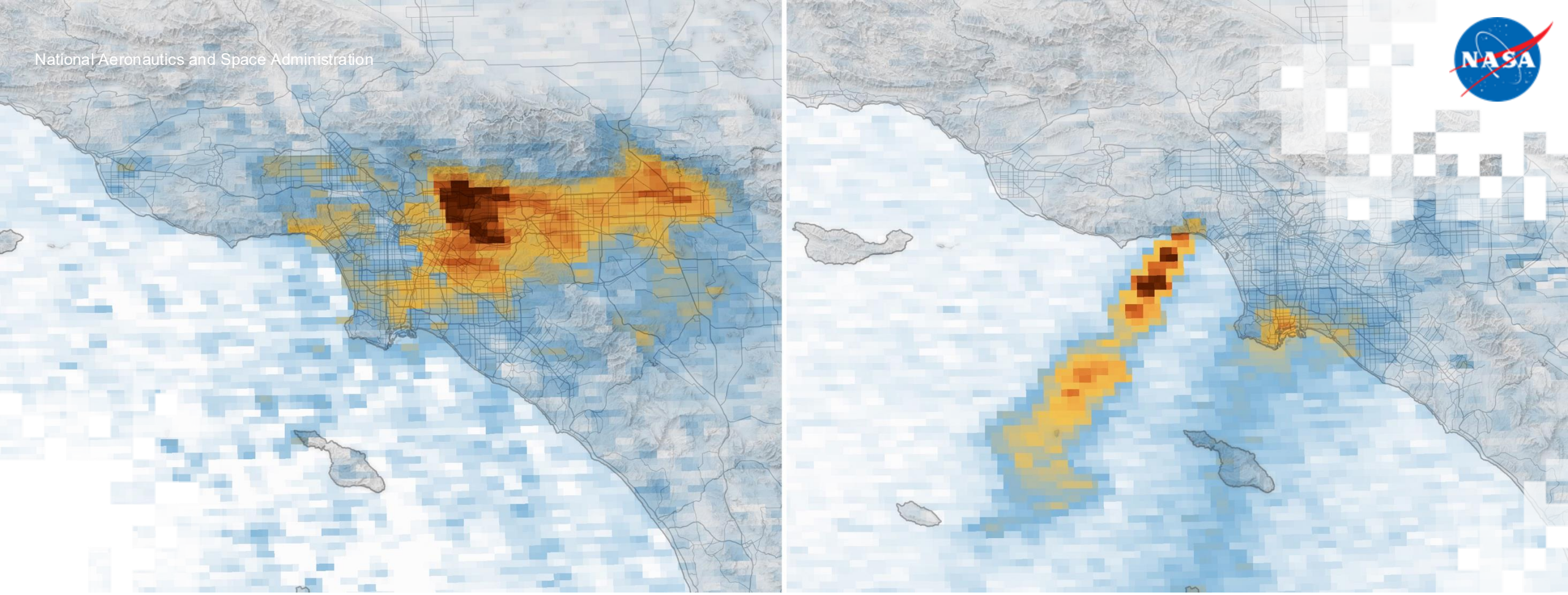

# Introduction to Geostationary Observations for Air Quality Applications in the Western US

Day 3, Part 3: Prepare for Group Project on Applying Remote Sensing Data

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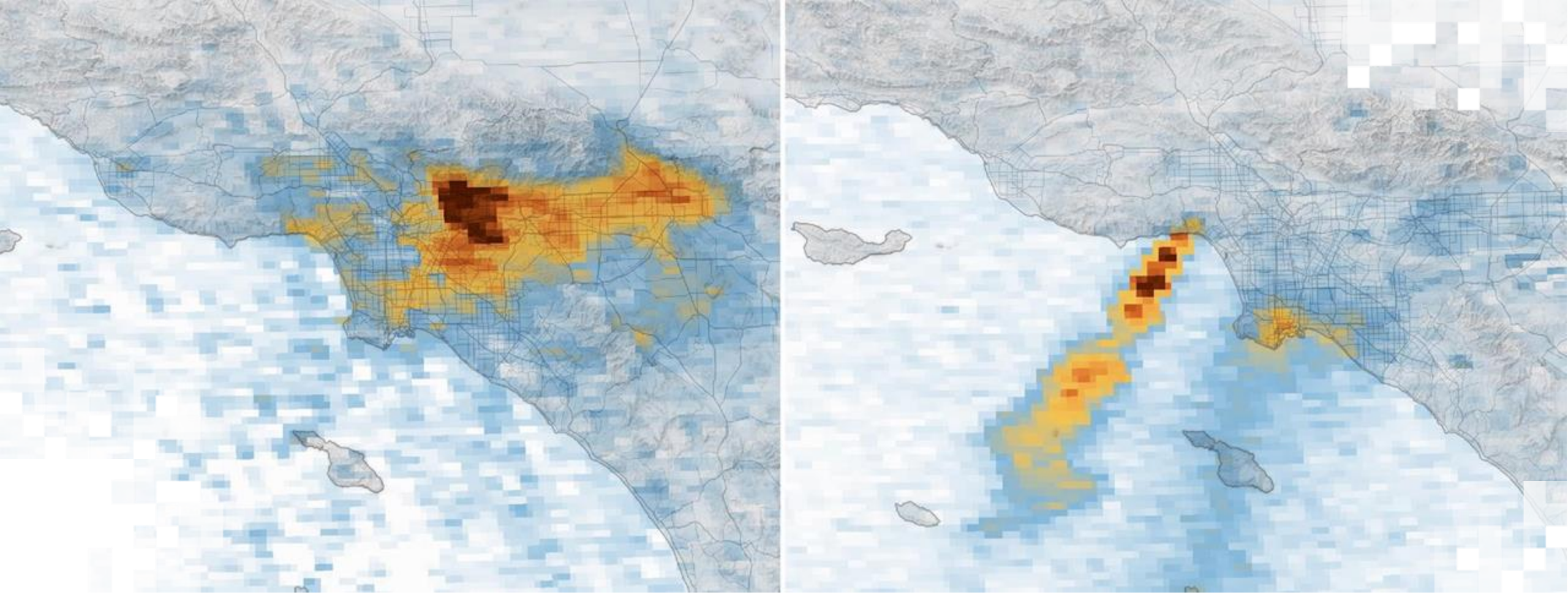

# Day 3, Part 3:
# Prepare for Group Project on Applying Remote Sensing Data

# Group Project on Applying Remote Sensing Data to an AQ Case Study

- In this exercise, you will analyze an air quality event of interest to you as a team.
- The goal is to use relevant resources (TEMPO or other remote sensing data) presented in this training, as well as any other data you wish to add for comparison (e.g., AQ monitors).
- Think of this as a story you tell using remote sensing imagery and data to reinforce your points.
- You will present your case study as a group to everyone.
- In addition to the details of the case study, please share anything you learned or any difficulties you had with using the tools or interpreting the data.

# Group Project Agenda

- **Now (until 12:00)**
  - Divide into groups of 3-5 people.
  - Choose an air quality event or topic of interest to your group.
  - We'll present some examples to give ideas on the next slides.
- **After Lunch (1:00 – 2:30)**
  - Use the tools and data resources we've discussed this week to create visualizations relevant to your case study.
  - Put together a short presentation about your case study (aim for about 5 slides).
  - We'll provide a template for these presentations.
- **After the Afternoon Break (2:45 – 4:15)**
  - Each group will present their findings (either as a group, or you can nominate a spokesperson).
  - Plan on 5 minutes for your presentation, so that we can accommodate each group.
  - Discuss what you found, what tools you used, what worked well, and what you struggled with.

# Case Study Examples

- Look at a wildfire event, track smoke plumes, look for ozone precursors
  - July 2024 Western Canadian Fires
  - January 2025 Palisades Fire
  - June 2025 New Mexico Fires

- Map and compare $NO_2$ patterns in a city at different times of day
  - Example of a state-wide $NO_2$ map from the polar-orbiting TROPOMI, at its overpass time

- Compare satellite products to in-situ measurements at monitors
  - Examine how spatial and temporal trends compare between satellite and in-situ data

- Compare an air quality forecast or model output to remote sensing observations

# Group Project Objectives

By the end of the Group Project, participants will have:

- Identified an air quality event or topic of mutual interest
- Used TEMPO or other NASA data to gain insights into their case study topic
- Created and presented a summary of their findings, including visualizations of remote sensing data, comparisons with other data sources (e.g., ground-based monitors or model outputs), key findings, and lessons learned or challenges encountered when using remote sensing data
- Received feedback on their case study from the group

# Resources to Consider

- Visualization Tools:
  - NASA Worldview
  - NOAA AerosolWatch
  - TEMPO Website
  - Earthdata GIS
  - SPoRT Viewer
- Comparison & Analysis Tools:
  - RSIG3D
  - Earthdata GIS
  - Python Code Examples:
    - ASDC Github


APPLIED REMOTE SENSING TRAINING PROGRAM
TRAIN - EMPOWER - ADVANCE

# Good Luck!