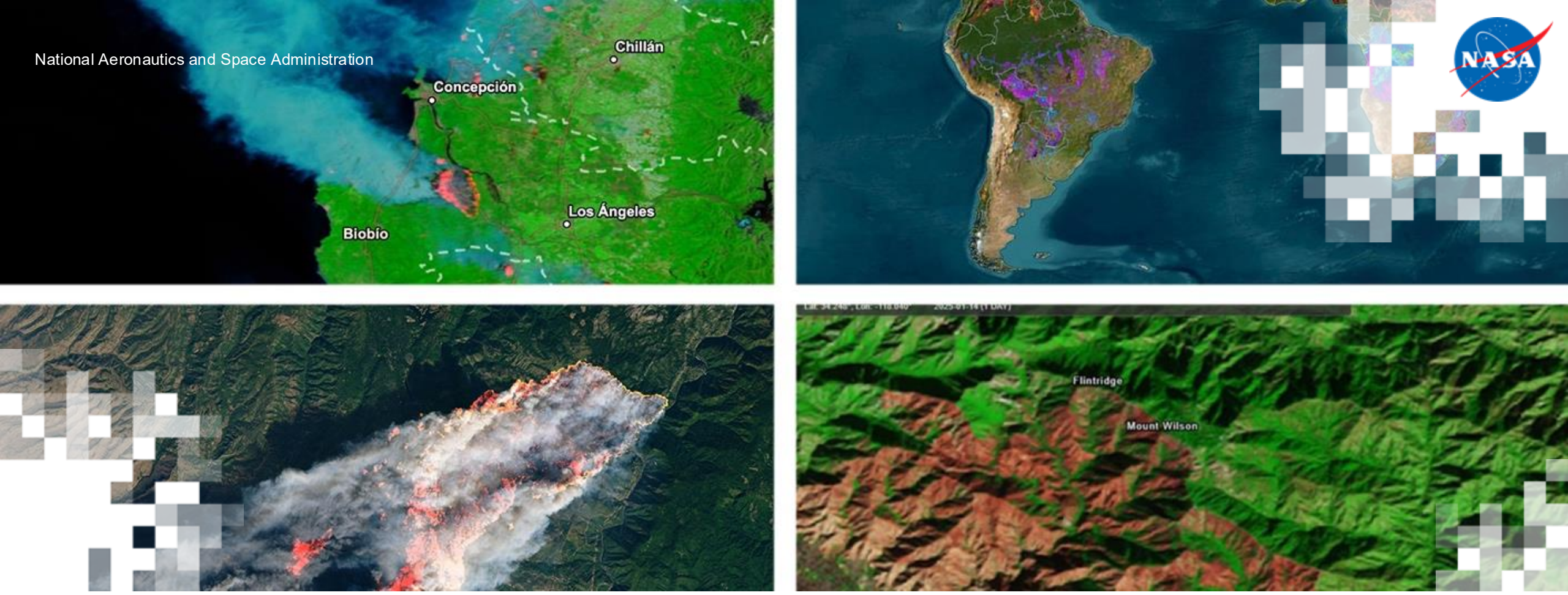


Advanced NASA Earth Observations and Tools for Active Fire, Smoke, and Post-Fire Monitoring

Part 2: Data Analysis and Visualization

Brad Quayle (USDA USFS), Dylan Mendes (SSAI), & Brock Blevins (SSAI/GSFC)

November 19, 2025

Training Outline

Part 1

Post-Fire Imagery and Smoke Monitoring

November 12, 2025

Part 2

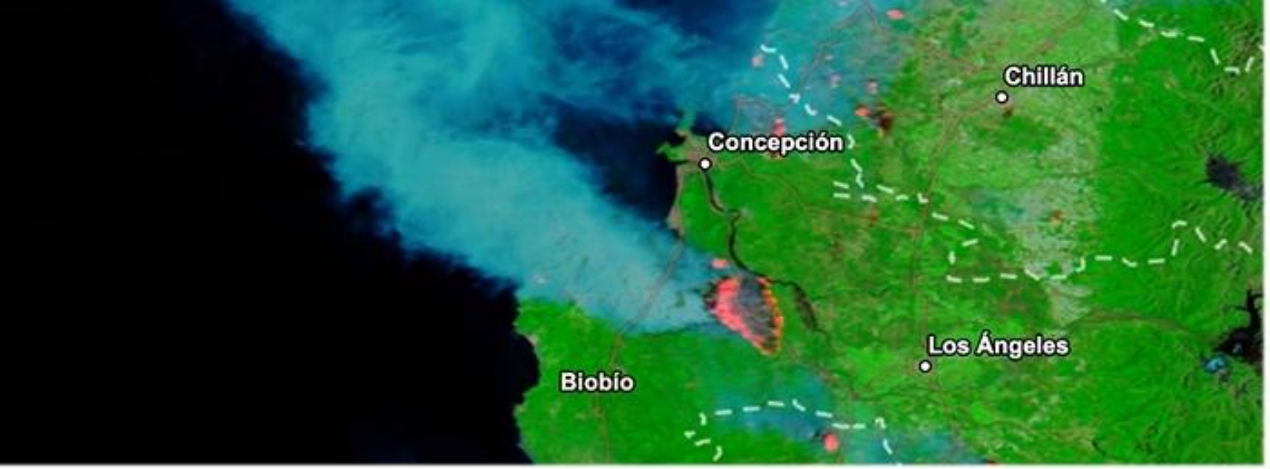
Data Analysis and Visualization

November 19, 2025

Homework

Opens November 19 – Due December 3 – Posted on Training Webpage

A certificate of completion will be awarded to those who attend all live sessions and complete the homework assignment before the given due date.



Advanced NASA Earth Observations and Tools for Active Fire, Smoke, and Post-Fire Monitoring

Part 2: Data Analysis and Visualization

Part 2 – Trainers

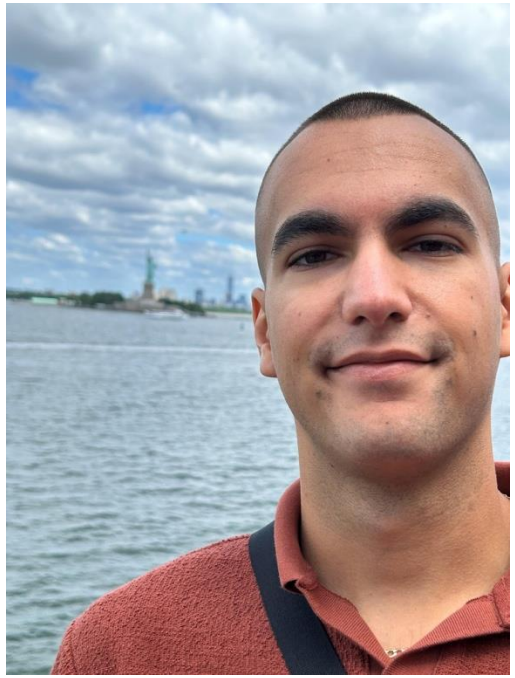
Brad Quayle

Disturbance Assessment and Services Program
USDA USFS

Dylan Mendes

Senior Application Developer

SSAI



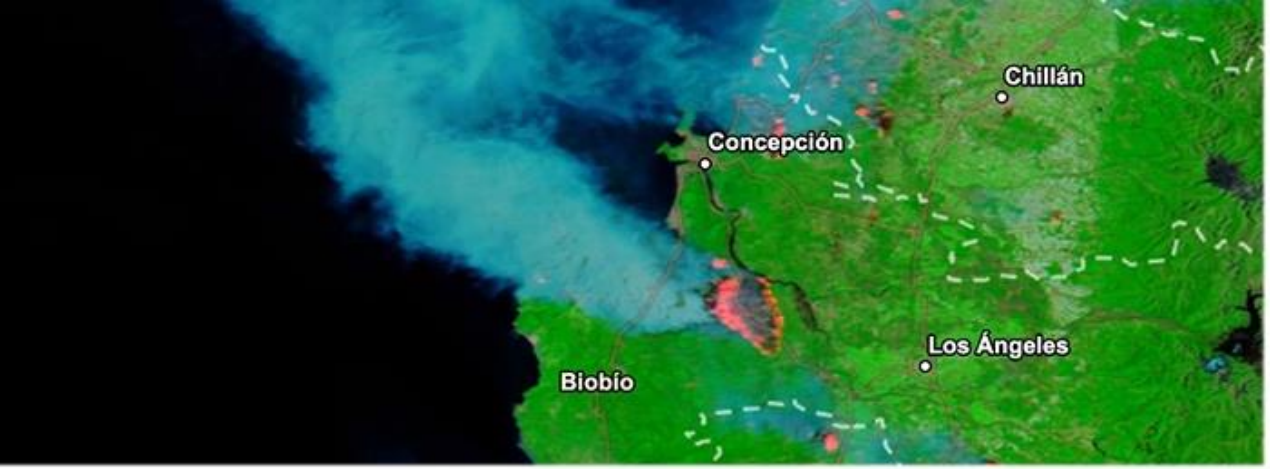
Part 2 Objectives

By the end of Part 2, participants will be able to:

- Recognize how static thermal anomalies associated with industrial and natural sources are identified
- Use data available in FIRMS to identify the locations of routinely detected static thermal anomalies
- Use Jupyter Notebooks to access and visualize FIRMS data

How to Ask Questions

- Please put your questions in the Questions box and we will address them at the end of the webinar.
- Feel free to enter your questions as we go. We will try to get to all of the questions during the Q&A session after the webinar.
- The remainder of the questions will be answered in the Q&A document, which will be posted to the training website about a week after the training.

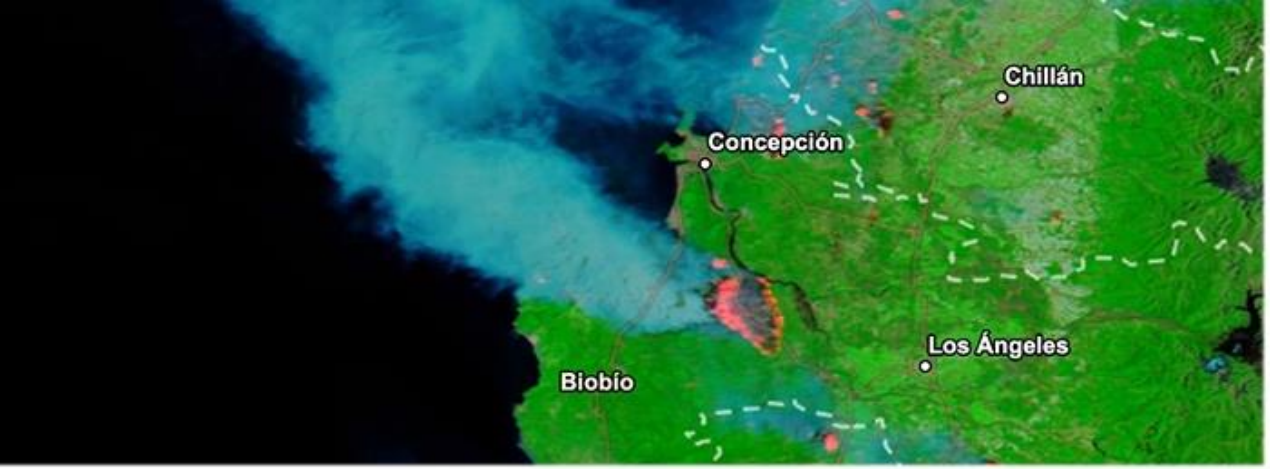


Static Thermal Anomalies (STAs)

Static Thermal Anomalies (STAs) – Demonstration

Demo Outline

- Overview of static thermal anomaly (STA) data available in FIRMS
- Accessing STA data, associated data and tools in FIRMS
- Use FIRMS to highlight examples of thermal anomaly activity that are likely not vegetation fires

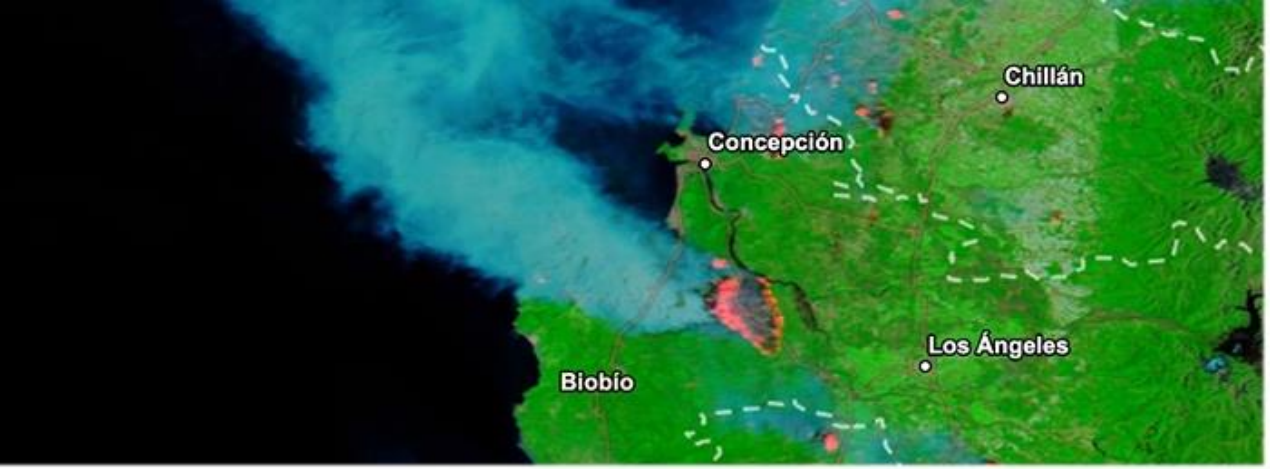


Jupyter Notebook Visualizations

Data Analysis and Visualization – Demonstrations

Demo Outline

- Connect to the FIRMS API to access active fire data pragmatically
  - Use a FIRMS MapKey to authenticate
- Visualize active fire information on static graph and interactive map
- Analyze active fire data on various charts
  - This can be extended however you see fit for your application

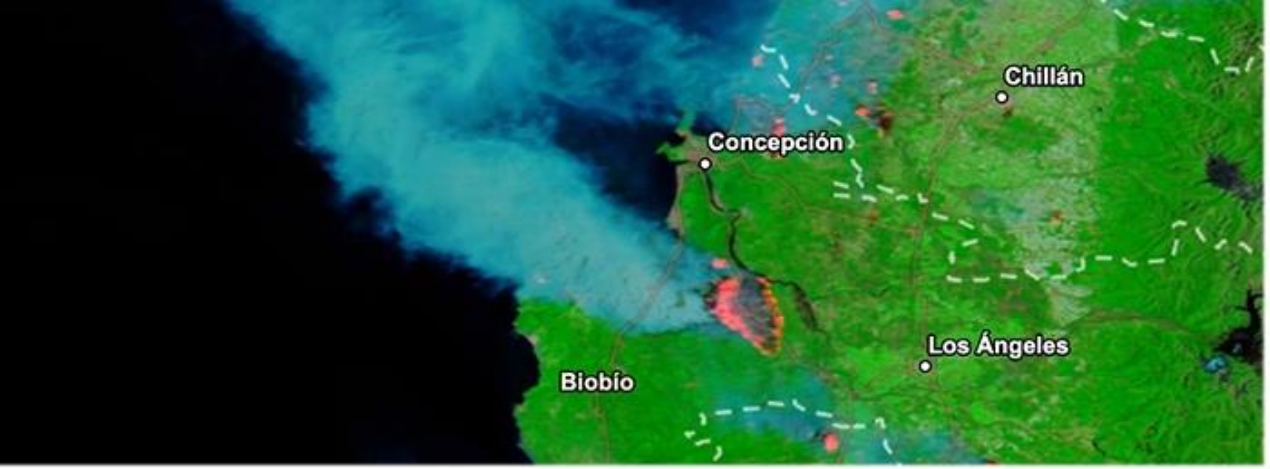


Part 2:

Summary

Part 2 Summary

- Access and use of STAs in FIRMS
- Display of STA layer
- Display different STA feature source types (industrial heat sources, natural heat sources)
- Identify satellite active fire detections associated with STAs
- How to access, ingest, visualize (static graph, interactive map), and manipulate FIRMS data using a Jupyter Notebook



Advanced NASA Earth Observations and Tools for Active Fire, Smoke, and Post-Fire Monitoring

Summary

Training Summary

- Multiple sources of satellite imagery and derived data products relevant to smoke, post-fire conditions, and STA identification are available within the NASA Fire Information for Resource Management System (FIRMS).
- Part 1:
  - Burned Area Mode, new VIIRS burned area product, and use of the HLS imagery and indices to perform burned area assessments
  - Smoke and aerosol Mode, use of the Aerosol Index and PyroCB layers to identify and track wildfire smoke
- Part 2:
  - Static Thermal Anomaly information to identify satellite active fire detections that may be associated with industrial sources, volcanoes, etc.
  - How to access, ingest, visualize, and manipulate FIRMS data using Jupyter Notebook files

Homework and Certificates

- **Homework:**
  - One homework assignment
  - Opens on 11/19/2025
  - Access from the training webpage
  - Answers must be submitted via Google Forms
  - **Due by 12/3/2025**

- **Certificate of Completion:**
  - Attend both live webinars (attendance is recorded automatically)
  - Complete the homework assignment by the deadline
  - You will receive a certificate via email approximately two months after completion of the course.

Contact Information

Trainers:

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- ARSET Website
- ARSET YouTube

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Dylan Mendes

Asen Radov


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Thank You!