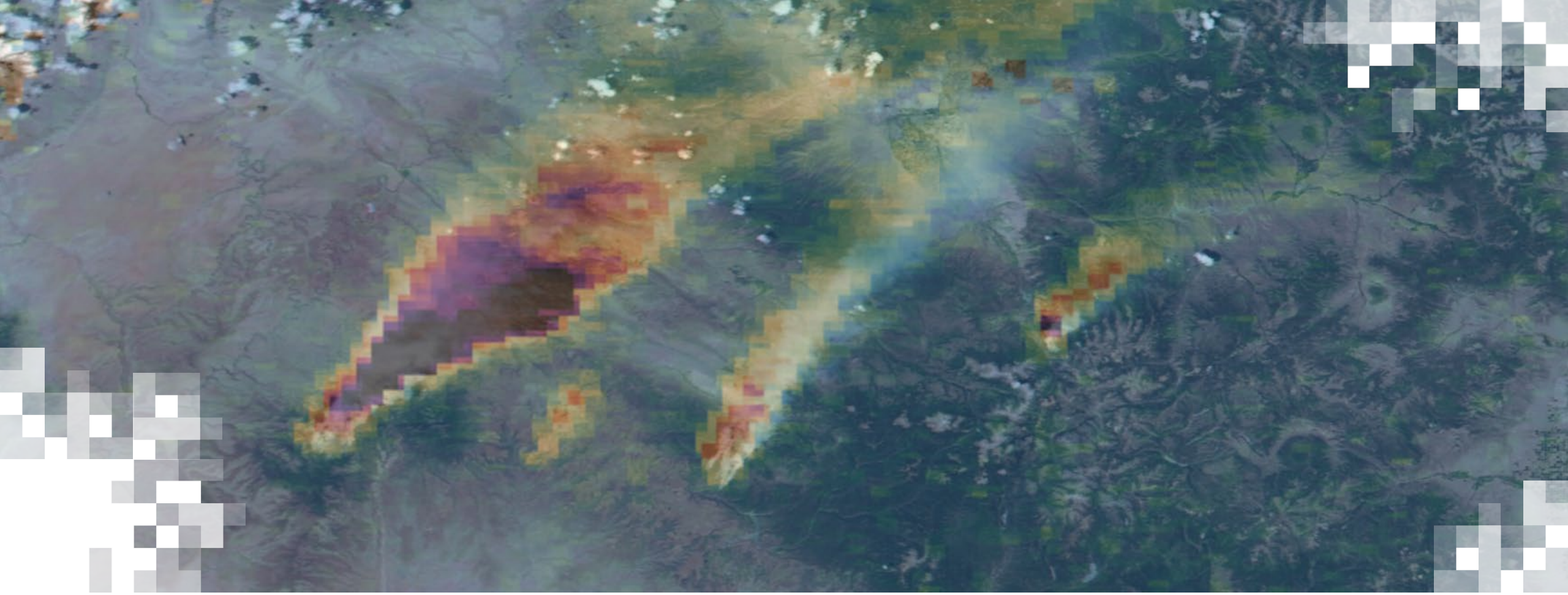




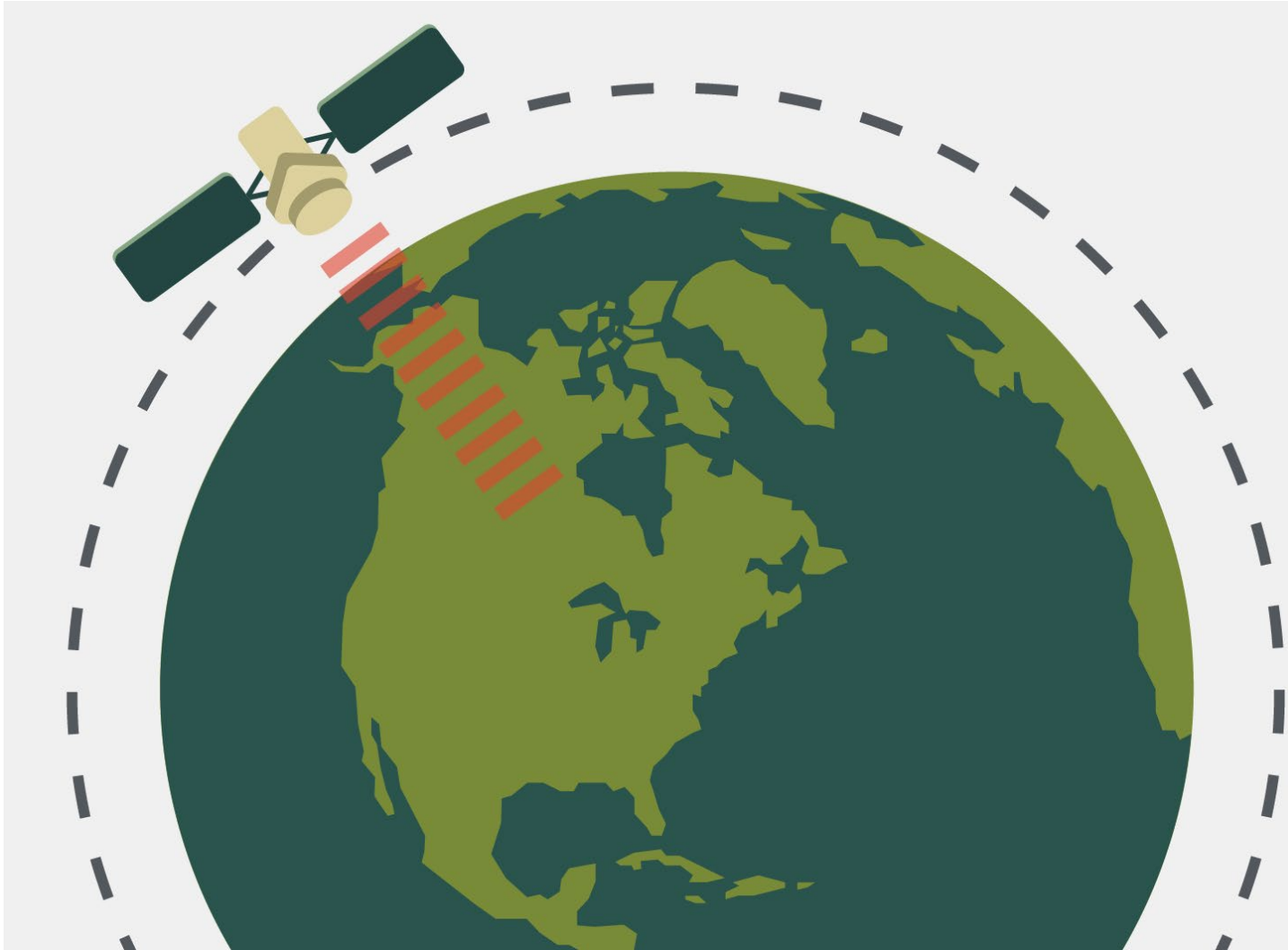
Fundamentals of Remote Sensing Review Quiz

Blooket Quiz

<https://play.blooket.com/play>



Fundamentals of Remote Sensing



Online, Self-Paced

5 Modules; ~2 hours



go.nasa.gov/3EVfr9T

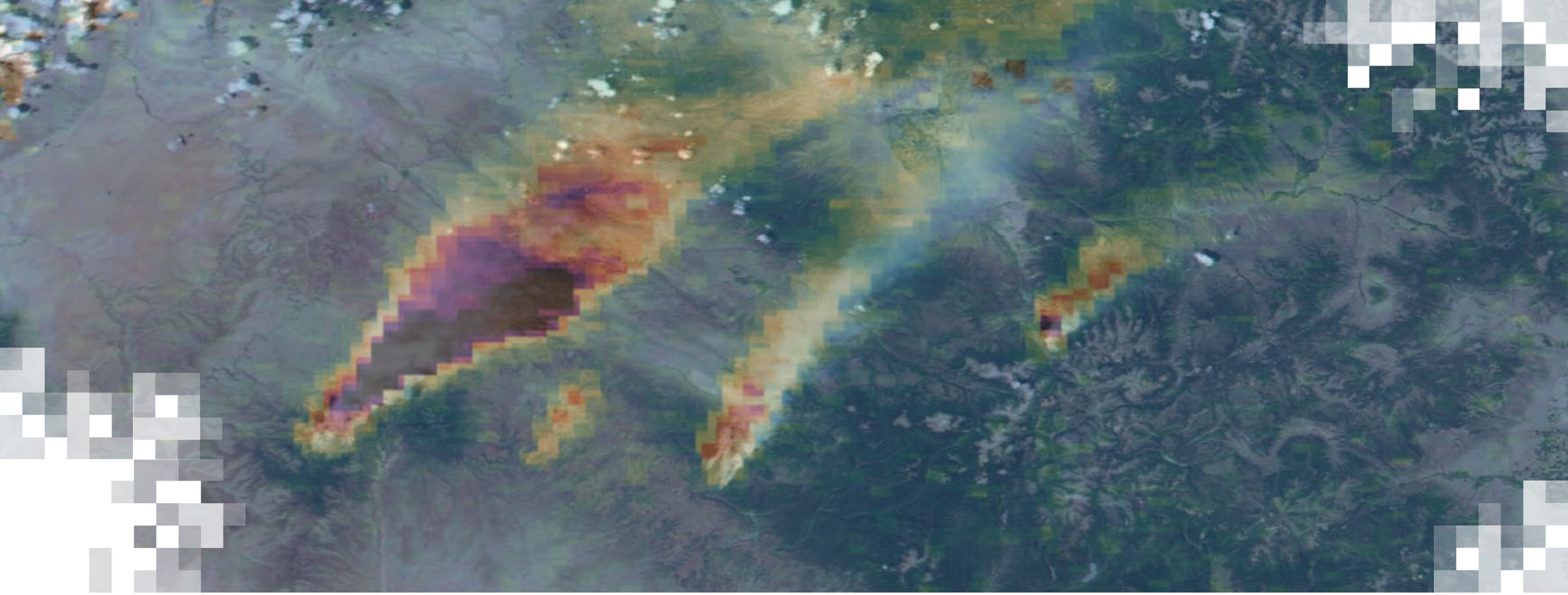
[Link to Fundamentals
Training](https://go.nasa.gov/3EVfr9T)





Thank You!





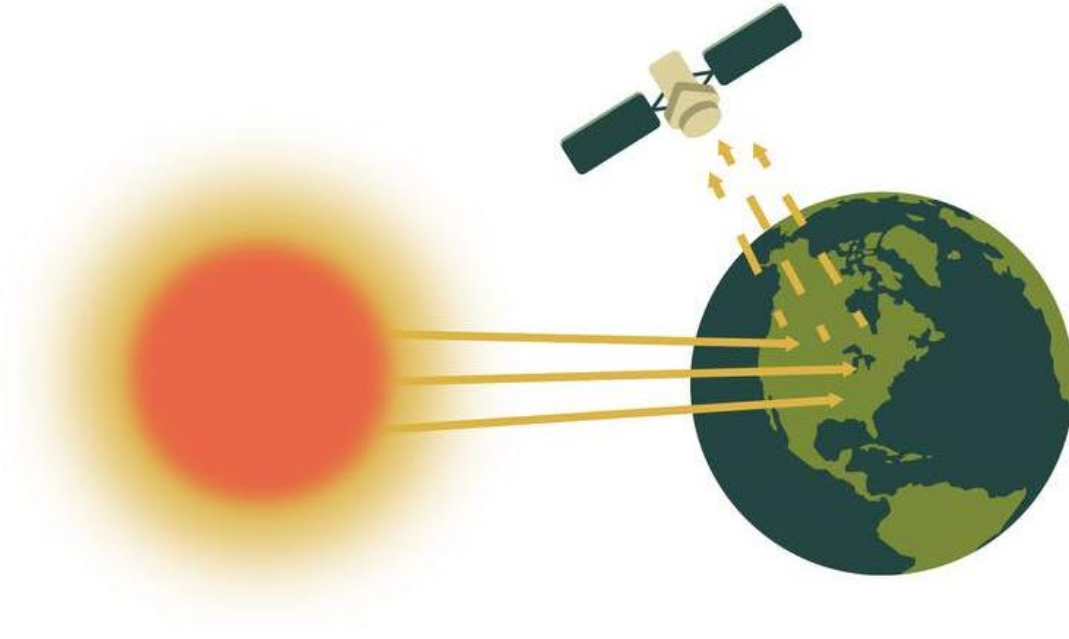
Concept Recap

Terminology

- Satellite
- Instrument or Sensor



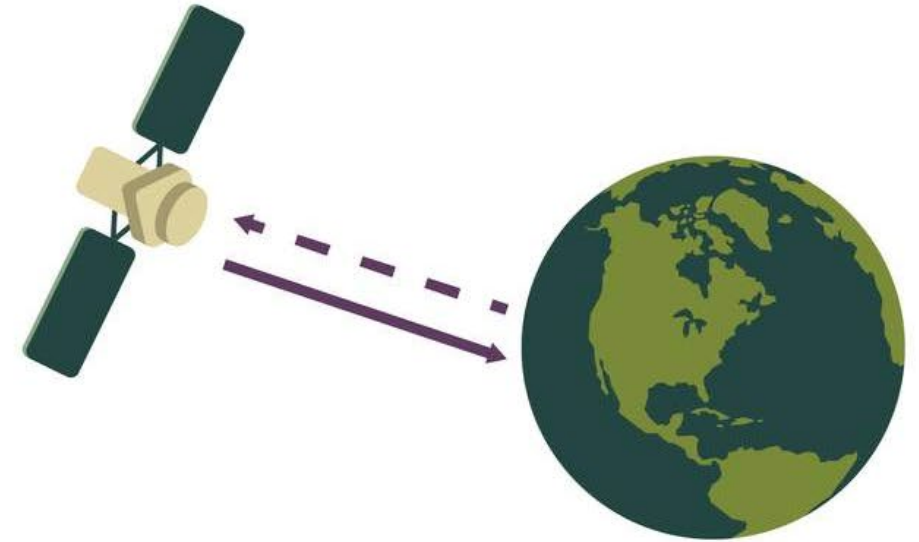
Active & Passive Sensors



Passive

Rely on sunlight or emitted energy

Lower power requirements, typically wider swath width



Active

Provide their own source of energy (e.g., laser, microwave, radar)

Higher power requirements, typically narrower swath width

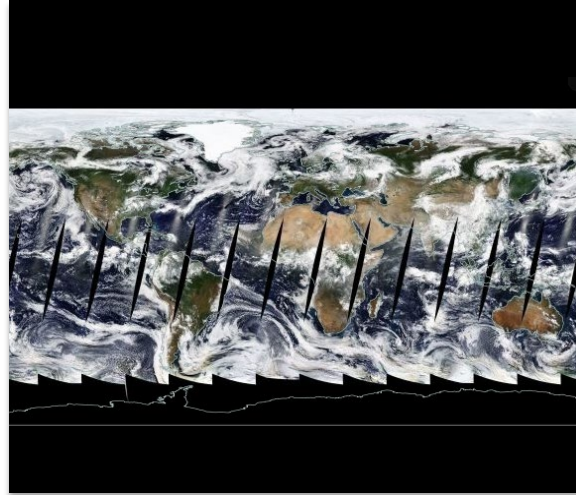
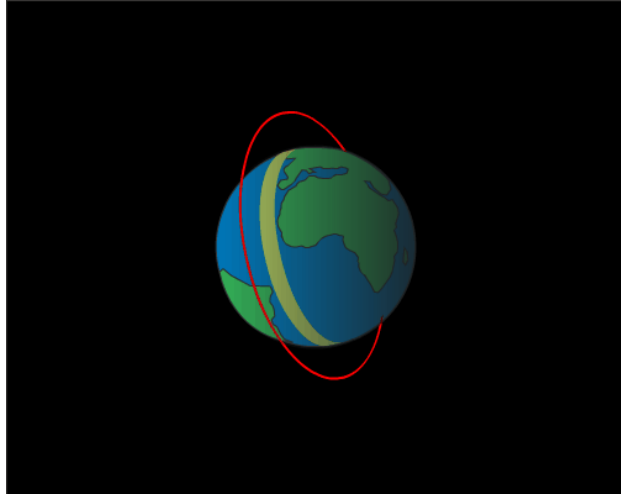


Terminology

- Satellite
- Instrument or Sensor
- Active and Passive Sensors



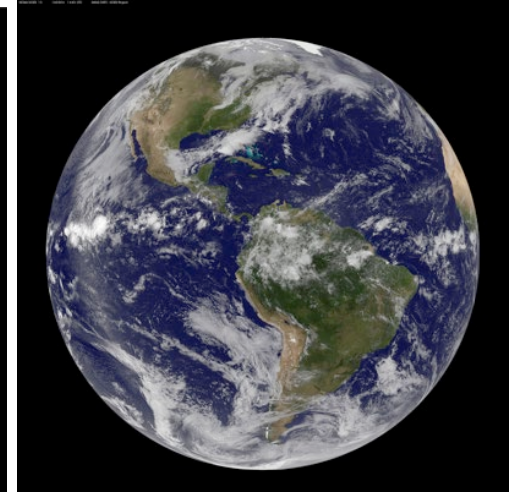
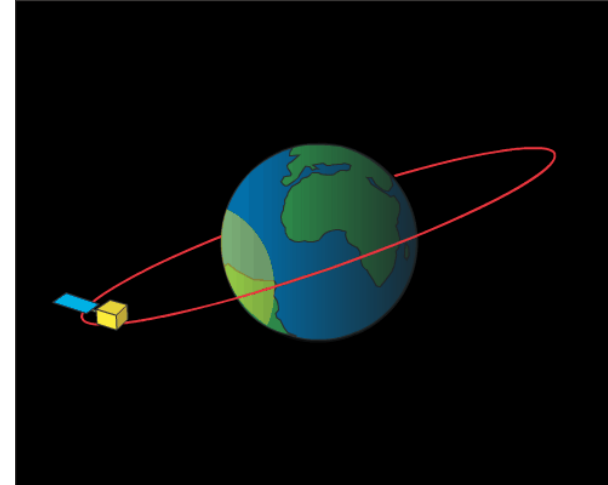
Orbits



Polar Orbit (LEO)

Sun synchronous orbit ~600-1,000 km above Earth passing close to the North and South poles with passes at **similar local solar time** each day

Most instruments achieve **full global coverage** every 1-2 days



Geostationary Orbit (GEO)

Orbit ~36,000 km above the Equator with the same rotational period as Earth

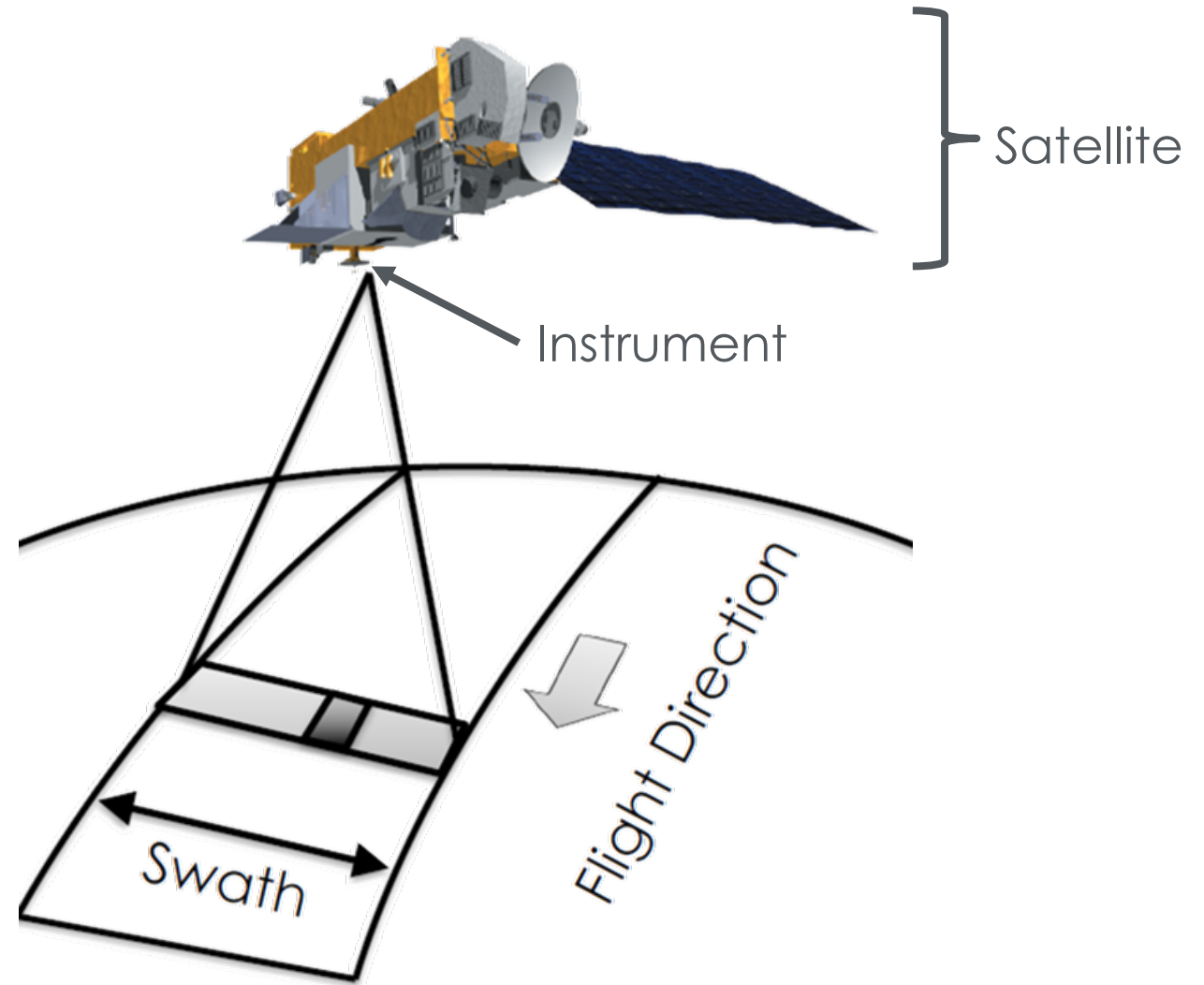
Appears 'fixed' above Earth, offering a **continuous daytime view** of the same place

Always covers the same hemisphere

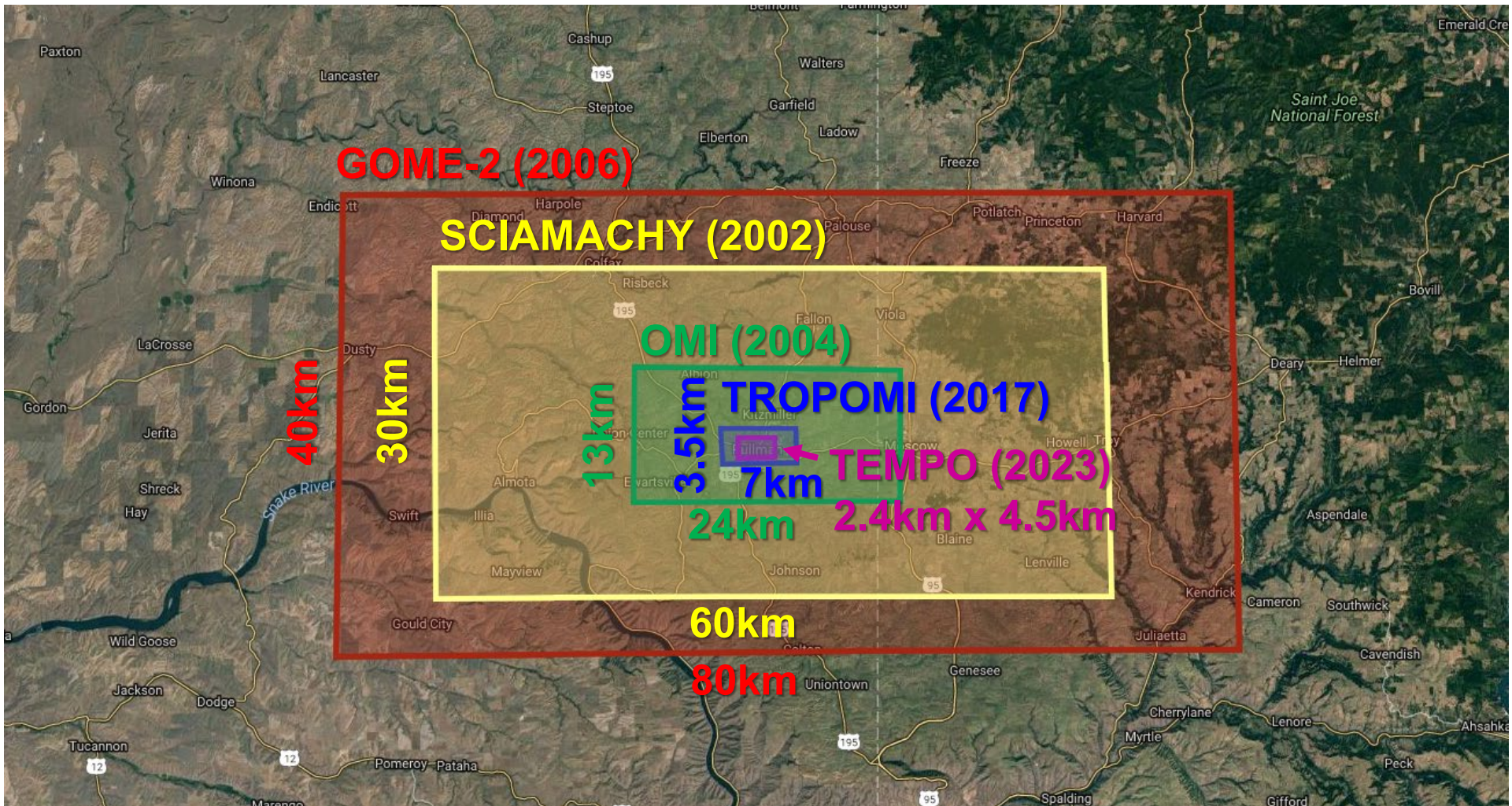


Terminology

- Satellite
- Instrument or Sensor
- Active and Passive Sensors
- Orbit
- Swath or Field of Regard
- Overpass Time (Local Solar Time)
- Equator Crossing Time
- Ascending/Descending

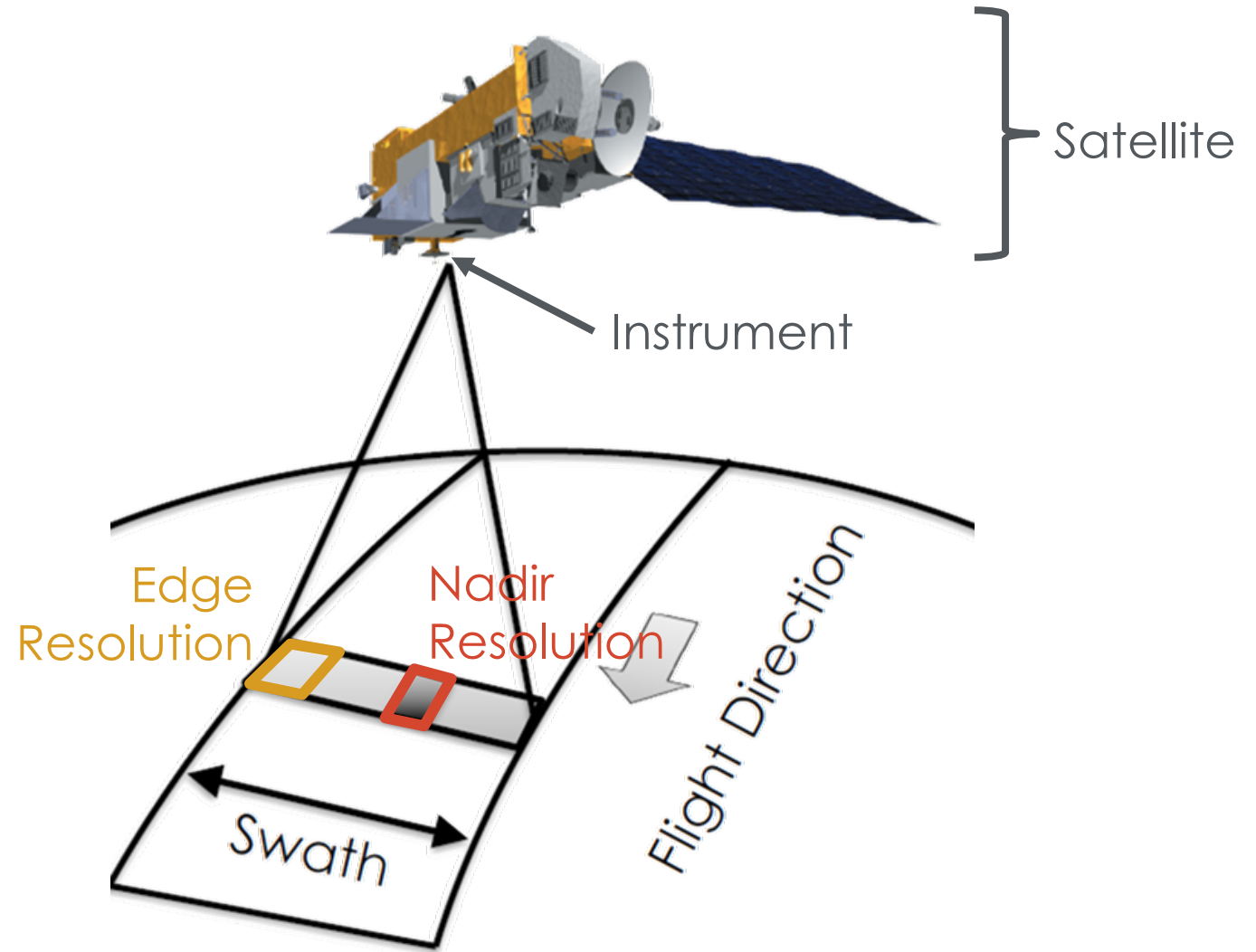


Spatial Resolution



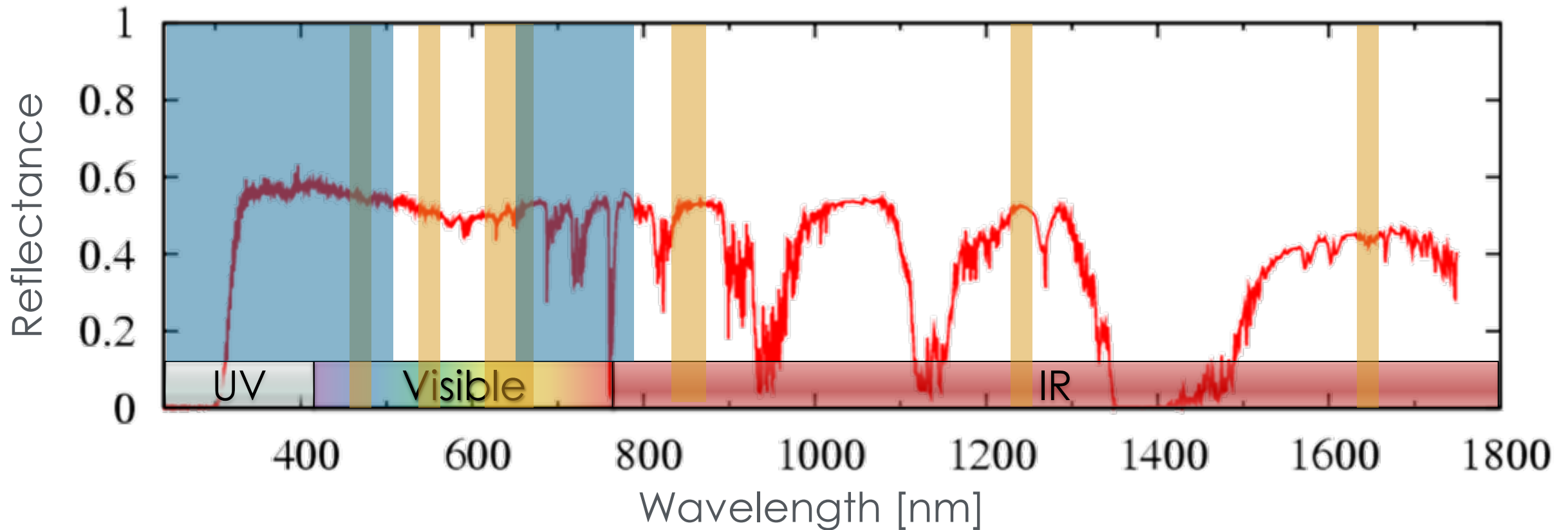
Terminology

- Satellite
- Instrument or Sensor
- Active and Passive Sensors
- Orbit
- Swath or Field of Regard
- Overpass Time (Local Solar Time)
- Equator Crossing Time
- Ascending/Descending
- Spatial Resolution (Nadir vs. Edge)



Spectral Range & Resolution

TROPOMI Hyperspectral Band Width: ~0.5 nm (2600 channels)

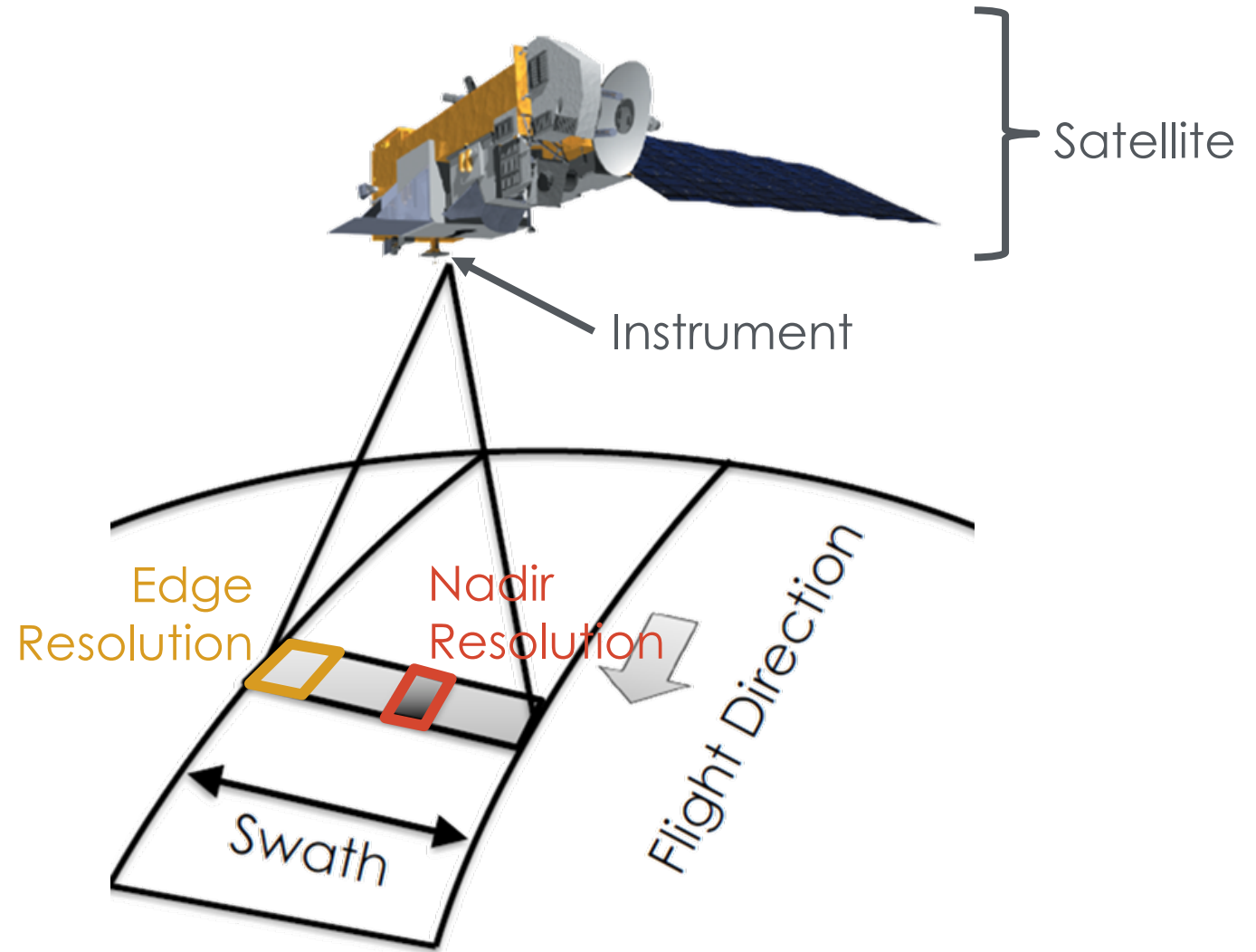


MODIS Multispectral Band Width: 10-50 nm (19 channels)



Terminology

- Satellite
- Instrument or Sensor
- Active and Passive Sensors
- Orbit
- Swath or Field of Regard
- Overpass Time (Local Solar Time)
- Equator Crossing Time
- Ascending/Descending
- Spatial Resolution (Nadir vs. Edge)
- Spectral Resolution and Range



Satellite Data Processing Levels

- **Level 0:**
- Level 1:
- Level 2:
- Level 3:
- Level 4:

Source: [Data Processing Levels](#). NASA EarthData.



Satellite Data Processing Levels

- **Level 0:** Raw data
- **Level 1:**
- **Level 2:**
- **Level 3:**
- **Level 4:**

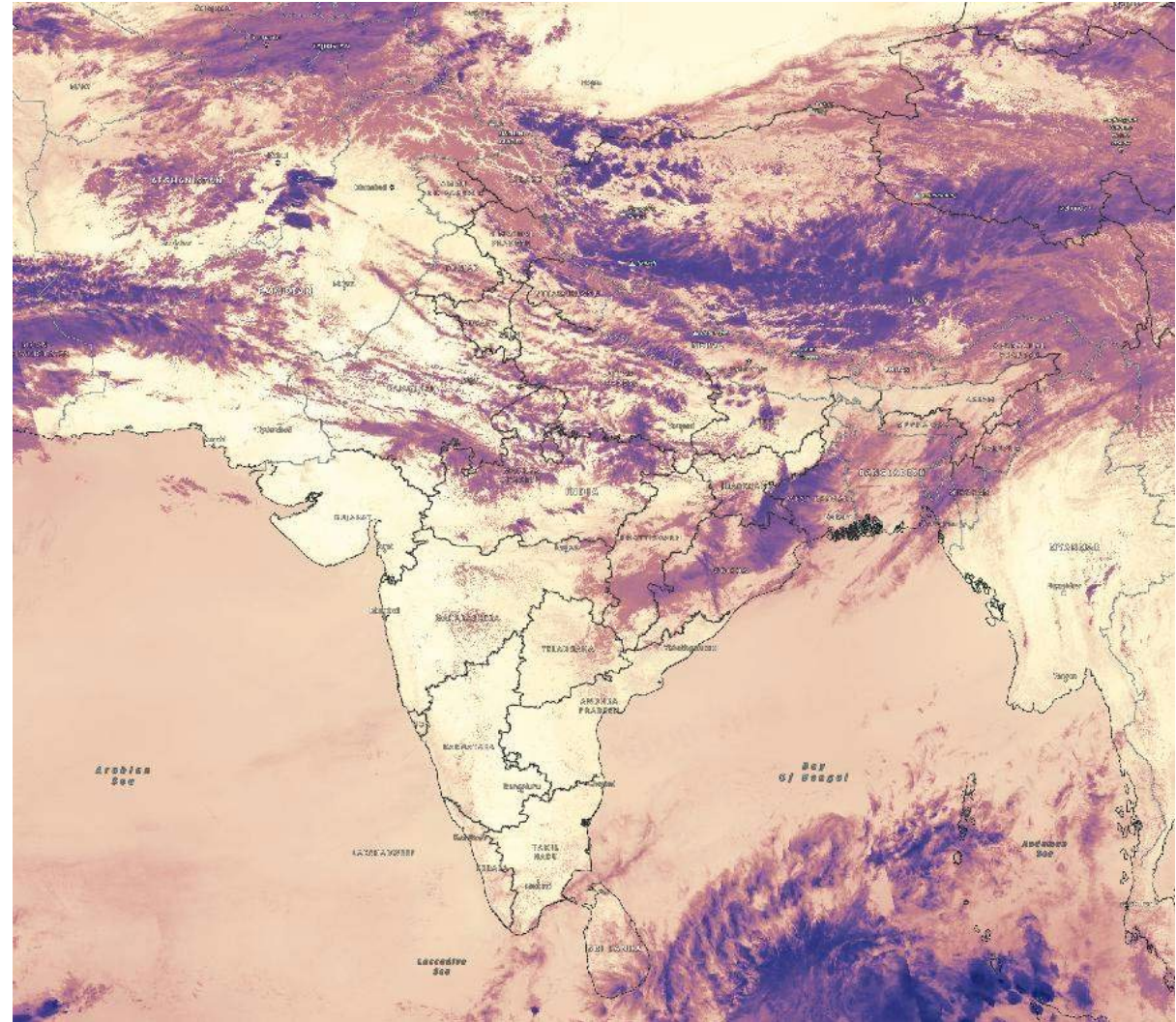
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Source: [Data Processing Levels](#). NASA EarthData.



Satellite Data Processing Levels

- **Level 0:** Raw data
- **Level 1:** Geo-referenced raw data
- **Level 2:**
- **Level 3:**
- **Level 4:**

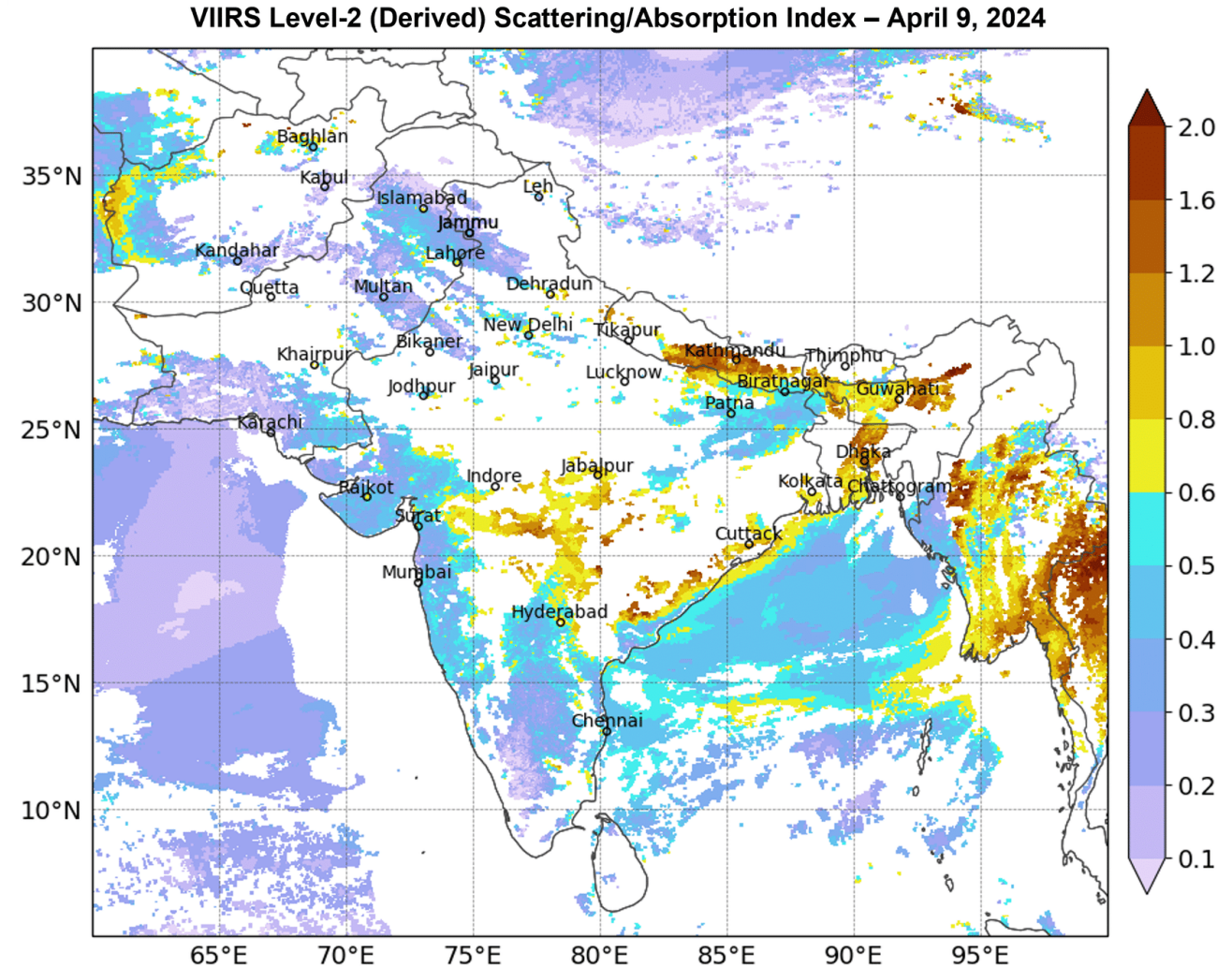


Source: [Data Processing Levels](#). NASA EarthData.



Satellite Data Processing Levels

- **Level 0:** Raw data
- **Level 1:** Geo-referenced raw data
- **Level 2:** Derived geophysical variables (e.g., column concentrations)
- **Level 3:**
- **Level 4:**

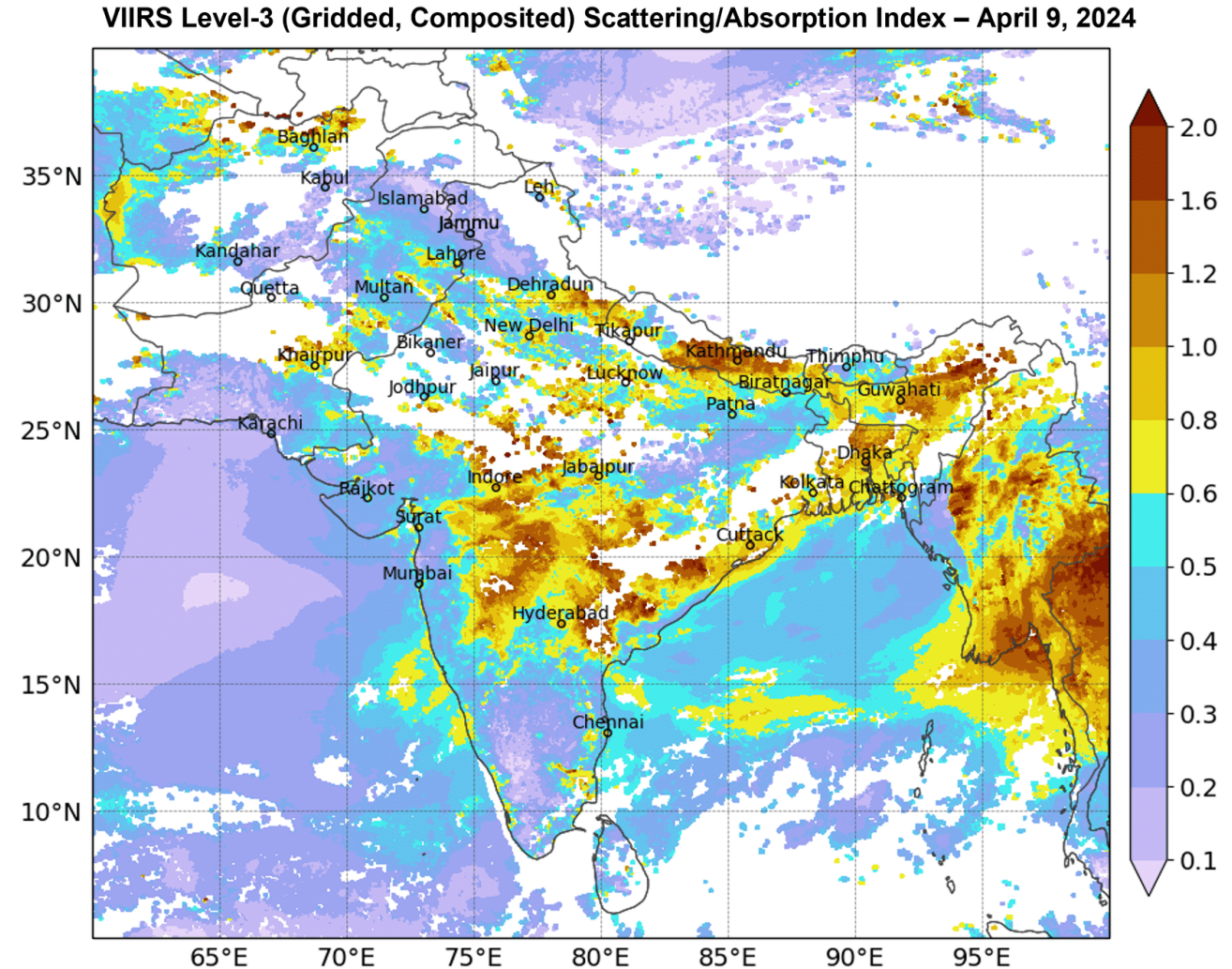


Source: [Data Processing Levels](#). NASA EarthData.



Satellite Data Processing Levels

- **Level 0:** Raw data
- **Level 1:** Geo-referenced raw data
- **Level 2:** Derived geophysical variables (e.g., column concentrations)
- **Level 3:** Data re-mapped to uniform space & time grids (usually with recommended quality controls)
- **Level 4:**



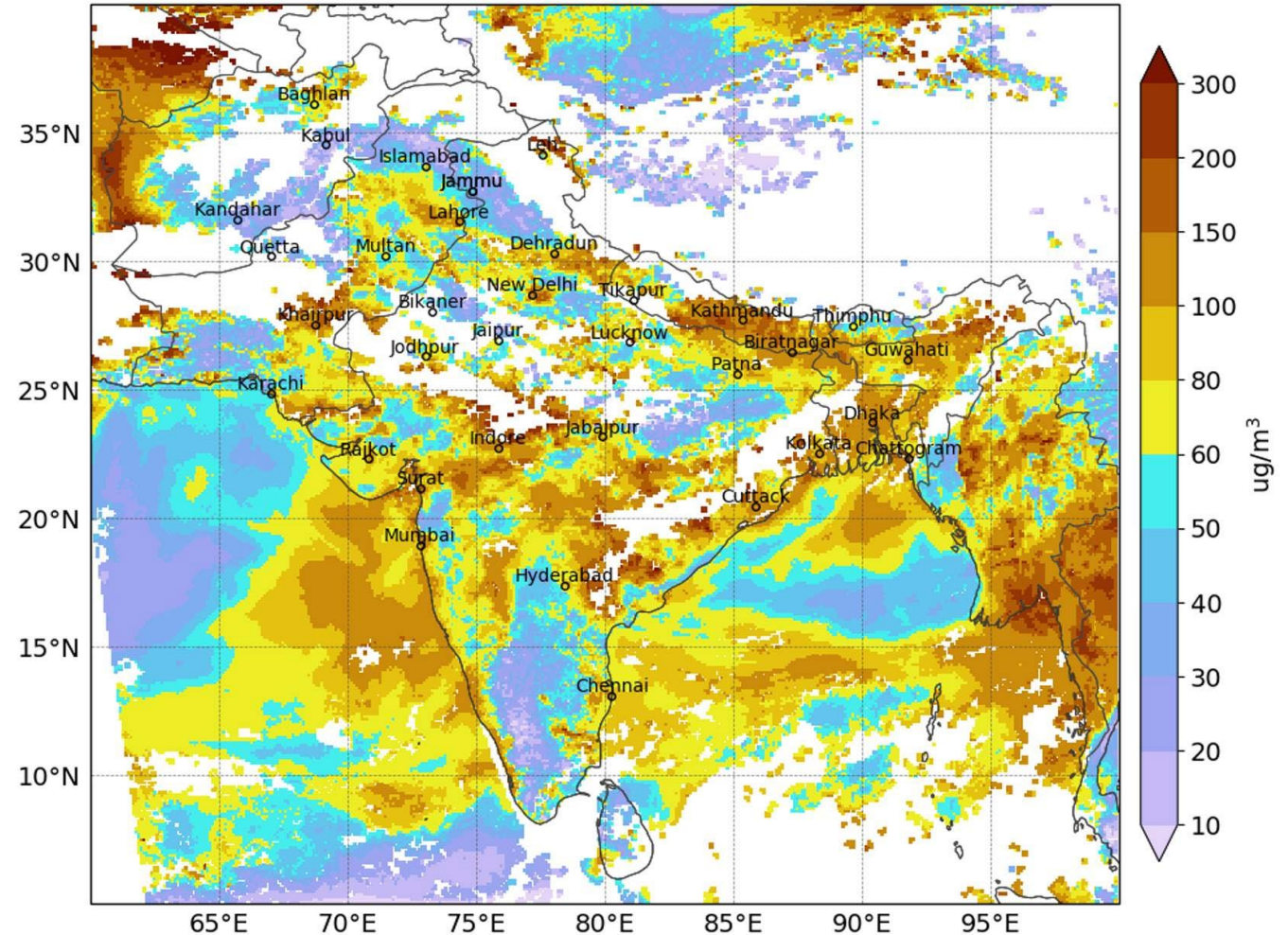
Source: [Data Processing Levels](#), NASA EarthData.



Satellite Data Processing Levels

- **Level 0:** Raw data
- **Level 1:** Geo-referenced raw data
- **Level 2:** Derived geophysical variables (e.g., column concentrations)
- **Level 3:** Data re-mapped to uniform space & time grids (usually with recommended quality controls)
- **Level 4:** Data from multiple sources combined together (e.g., satellite & model)

VIIRS Level-4 (Gridded + Model Data) Pollutant Concentration – April 9, 2024



Source: [Data Processing Levels](#). NASA EarthData.



Terminology

- Satellite
- Instrument or Sensor
- Active and Passive Sensors
- Orbit
- Swath or Field of Regard
- Overpass Time (Local Solar Time)
- Equator Crossing Time
- Ascending/Descending
- Spatial Resolution (Nadir vs. Edge)
- Spectral Resolution and Range
- Data Product
- Processing Level
- Granule

