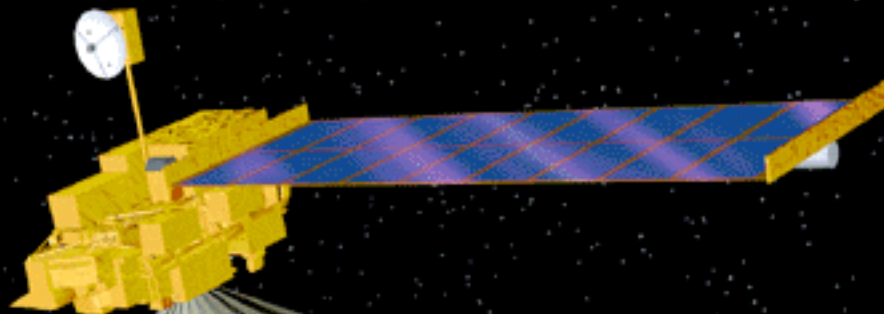


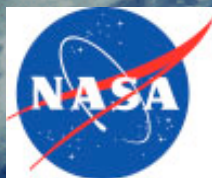


Plume Heights From MISR



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Roger Davies
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**Jet Propulsion Laboratory/
California Institute of Technology**



AEROSOL TRANSPORT MODEL PARAMETERIZATIONS OF SOURCE REGIONS –

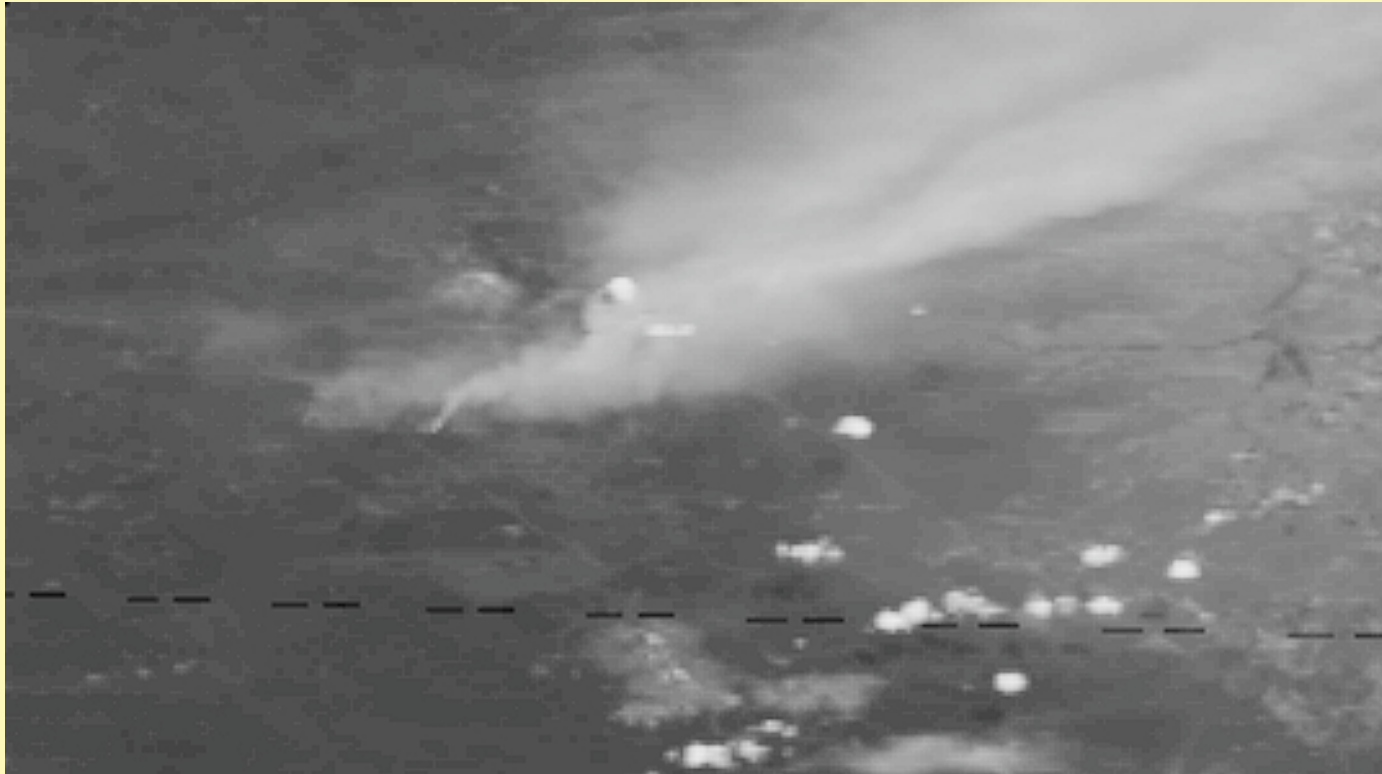
- Require Aerosol **Source Strength** – related to AOT
- Require Aerosol **Injection Height** – related to Plume Height

Volcanic, Dust, Biomass Burning, and many **Industrial** Aerosol Source Regions produce Distinct Plumes

- Makes Stereo Height Detection possible

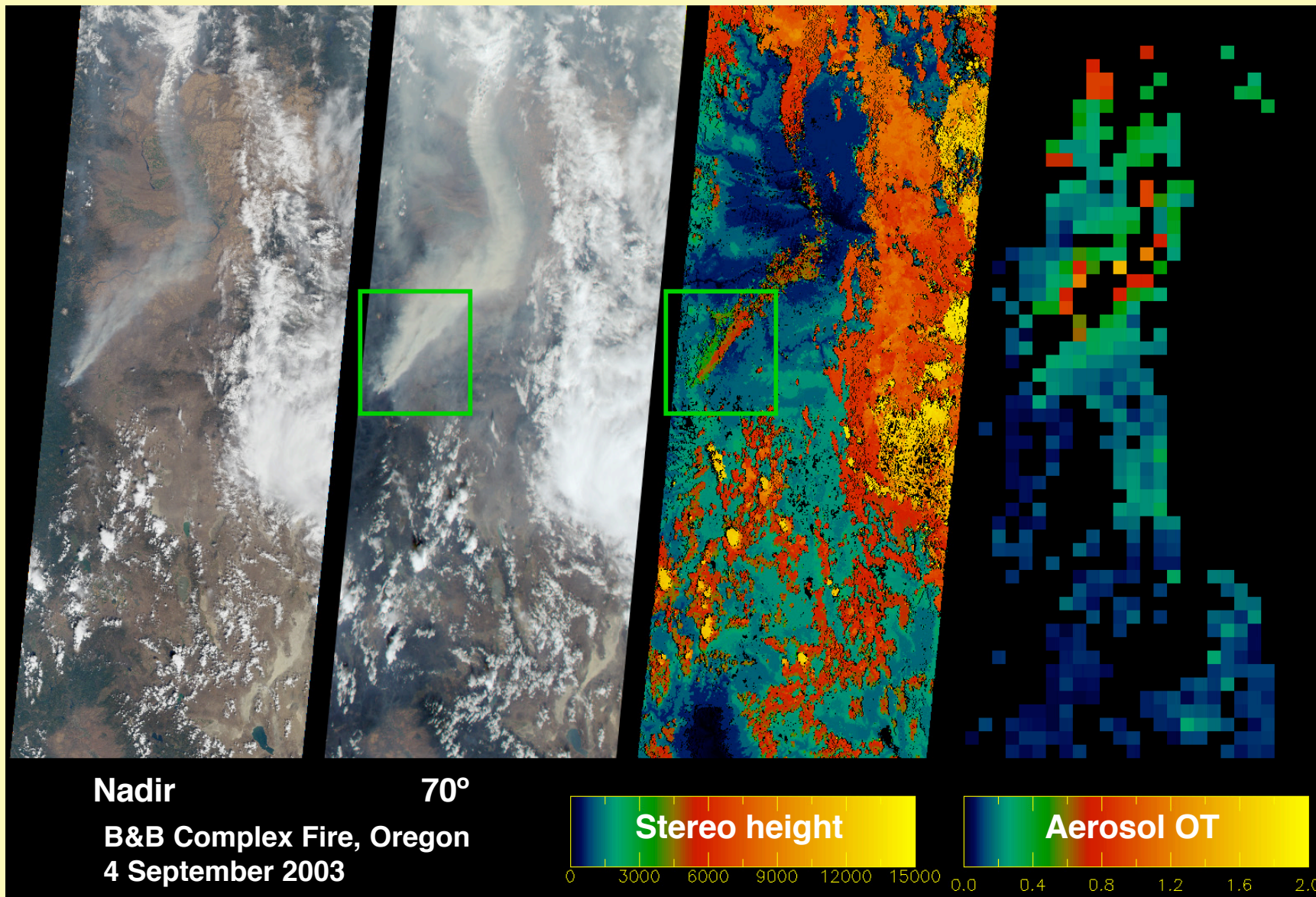
What can we do from satellites? **Plume Height**

MISR Perspective views from 5 angles



**B&B Complex Fire, Oregon
4 September 2003**

Fire Aerosol Plume Height & AOD Observations (MISR)

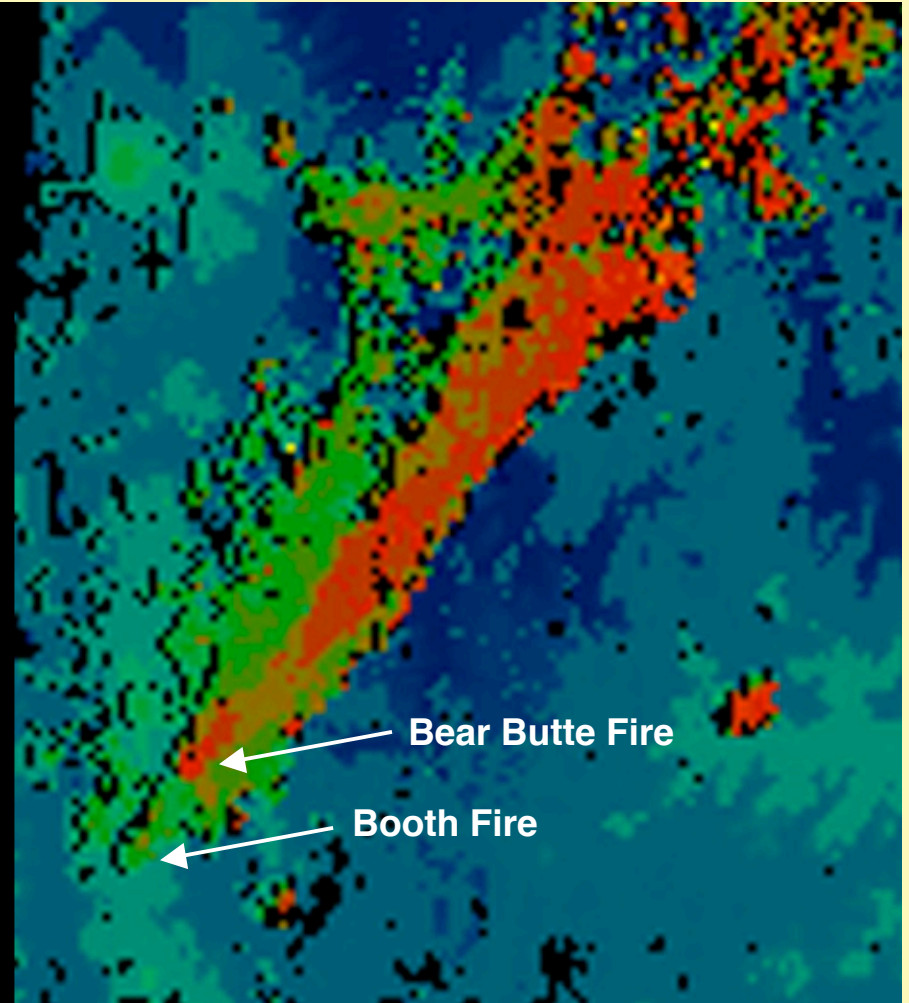


MISR Plume-height mapping using stereo (detail)



Nadir image

**B&B Complex Fire, Oregon
4 September 2003**

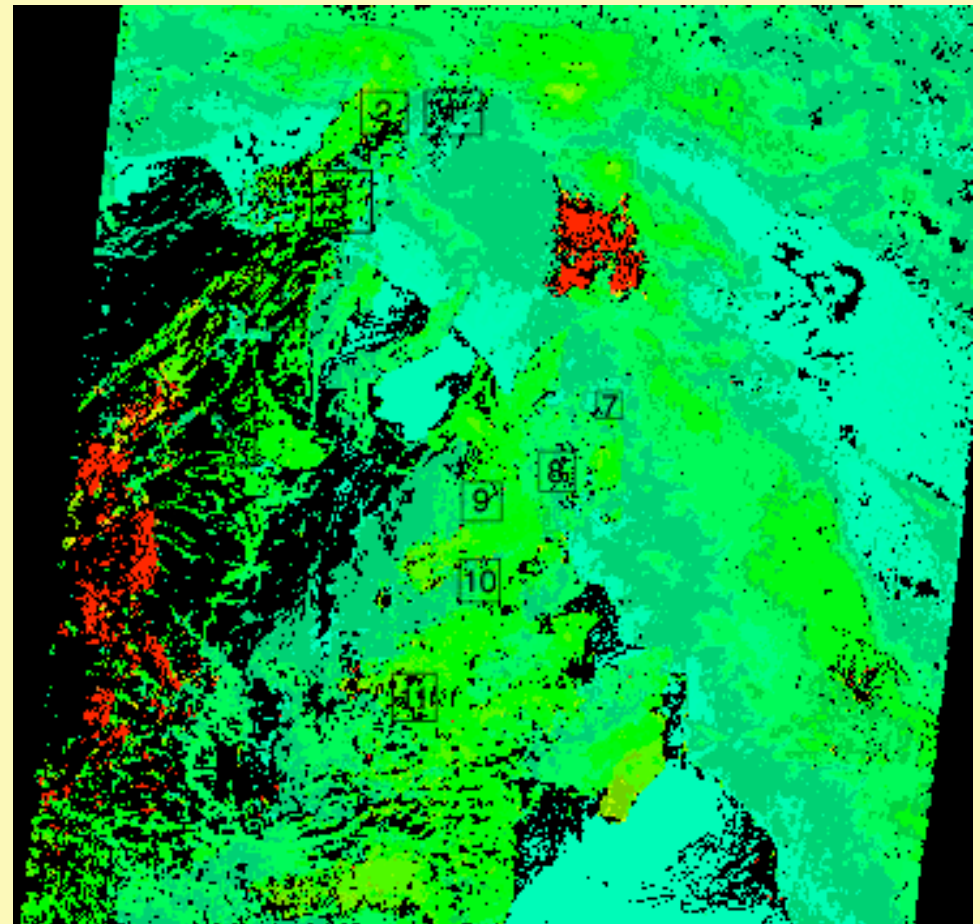
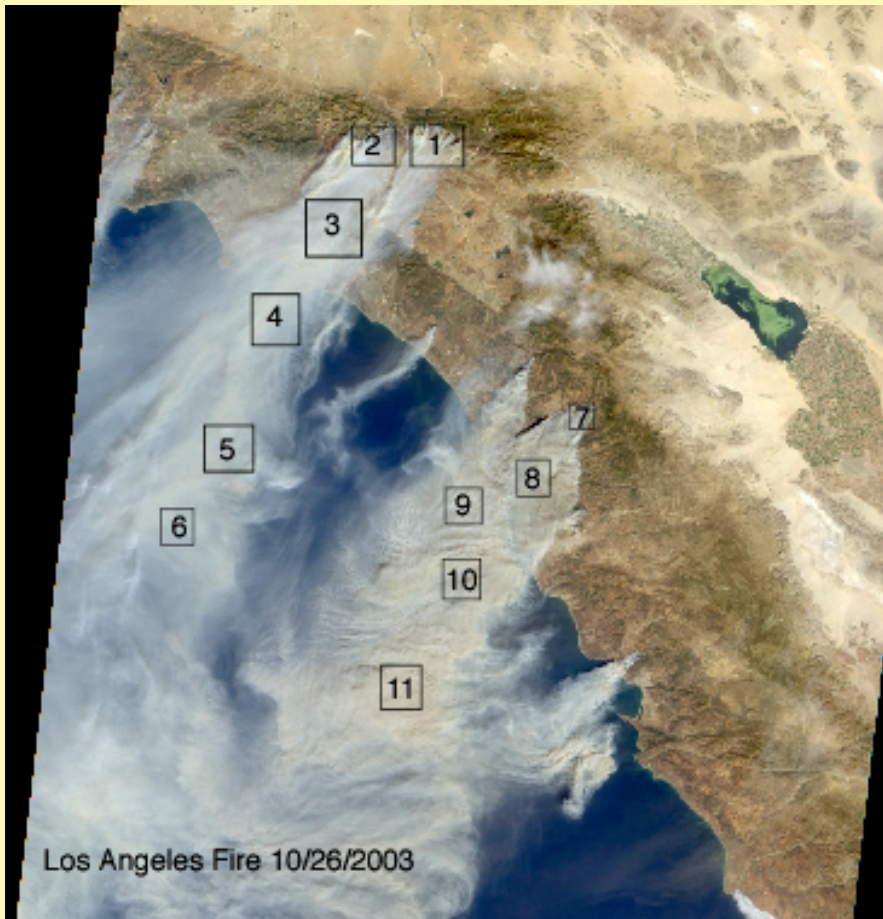


Stereo height

0 3000 6000 9000 12000 15000

Los Angeles Fires October 26, 2003

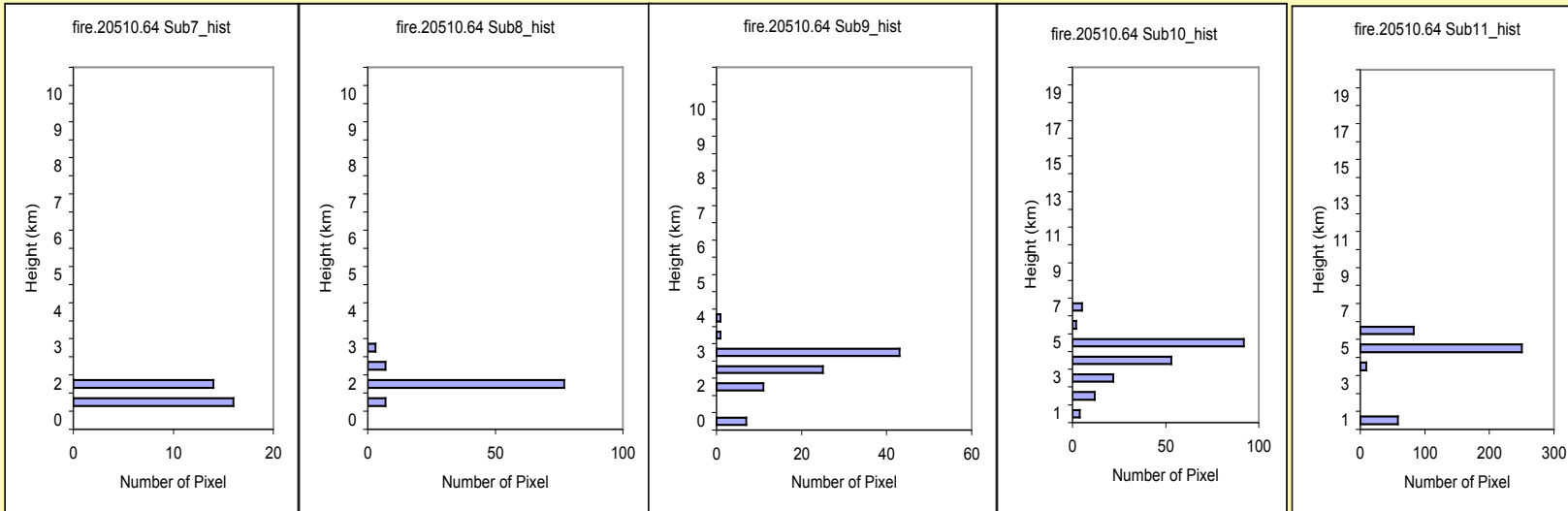
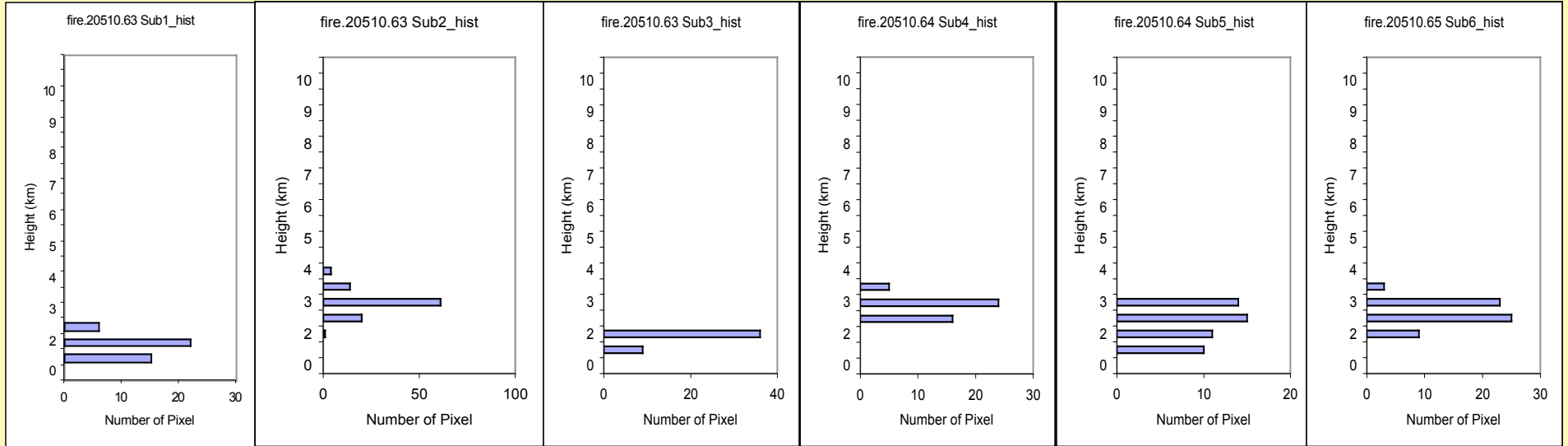
MISR Orbit 20510



Kahn & Li, in preparation, 2004

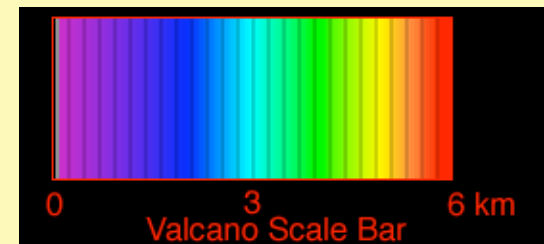
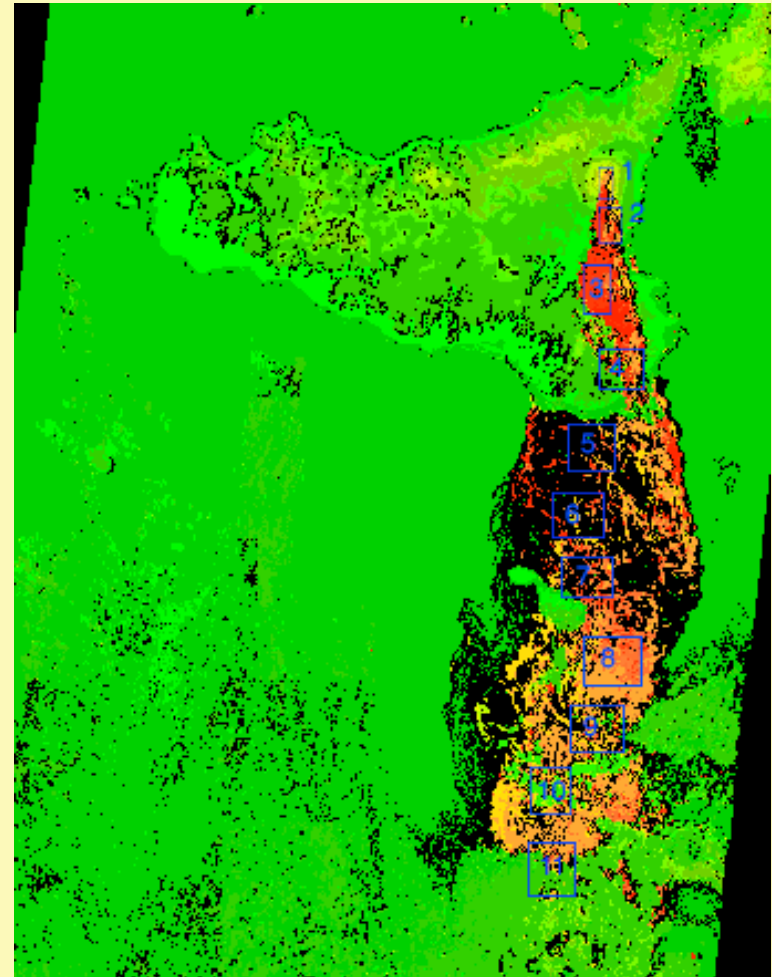
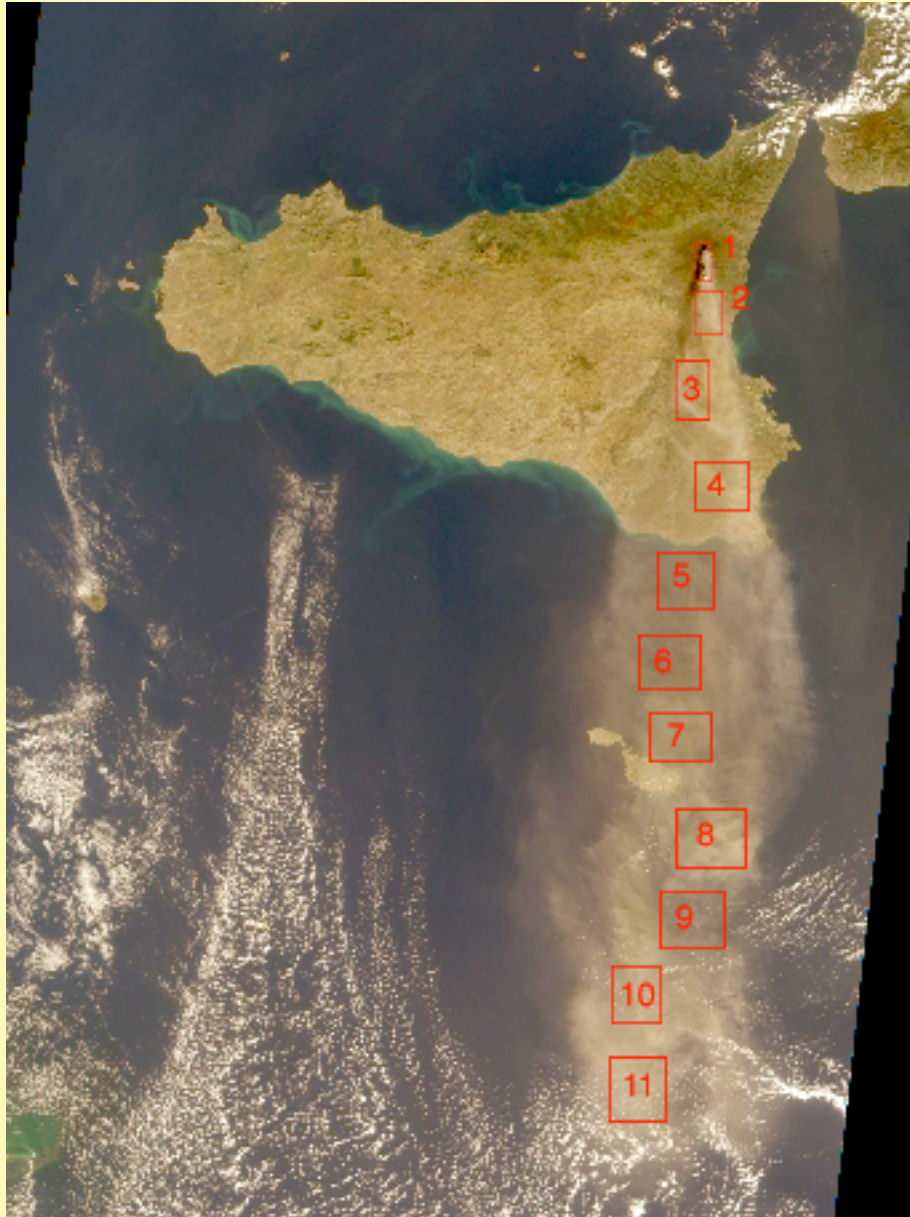


Los Angeles Fire Plume Height Analysis October 26, 2003



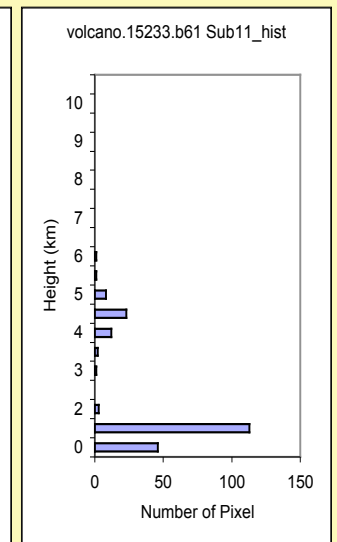
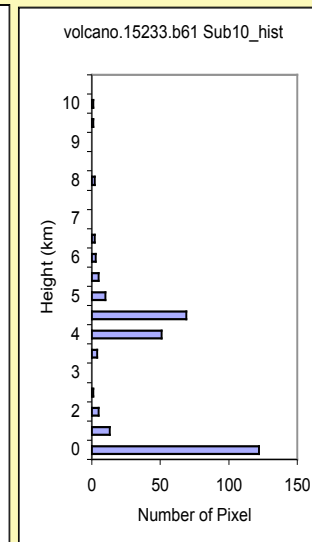
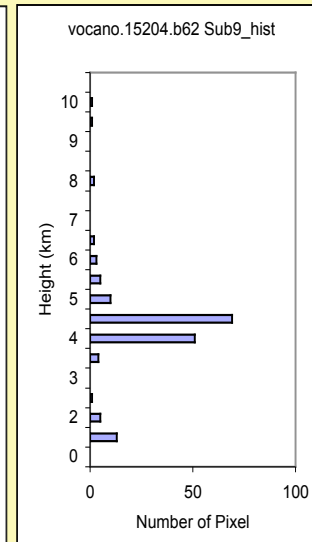
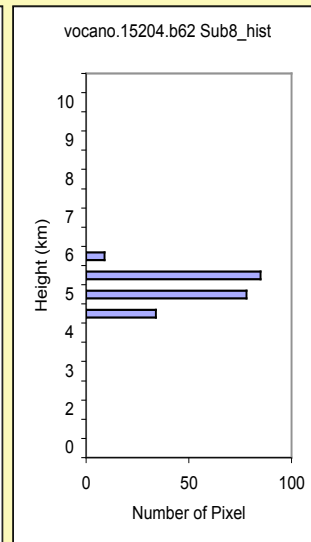
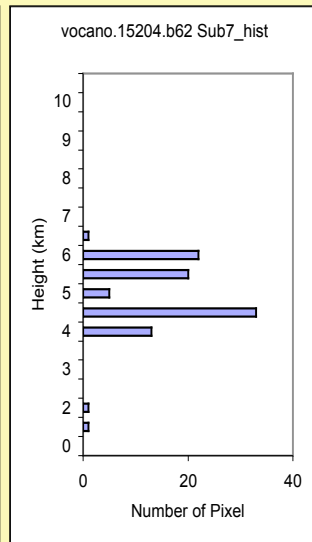
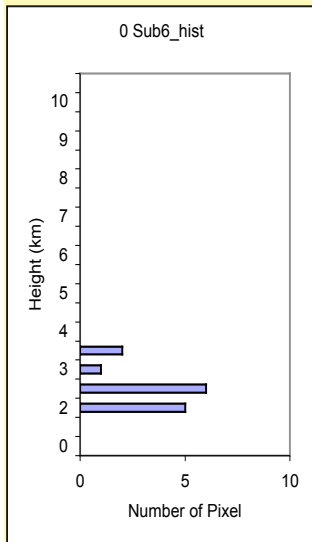
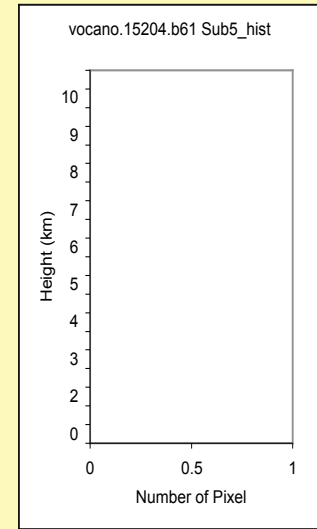
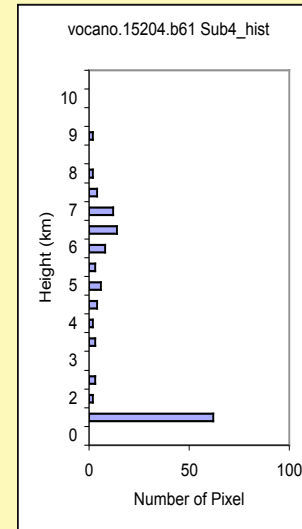
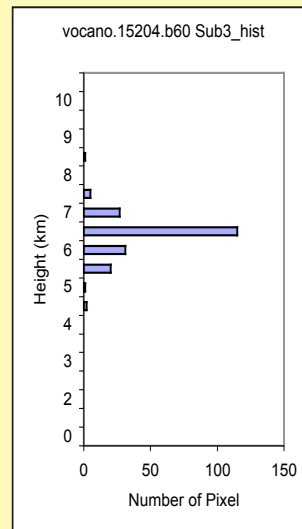
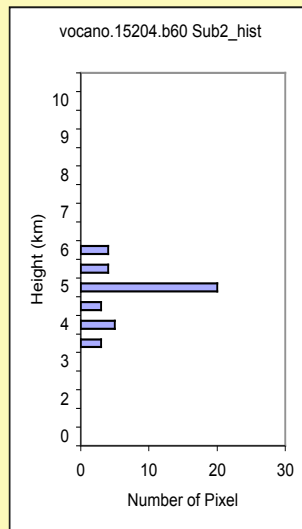
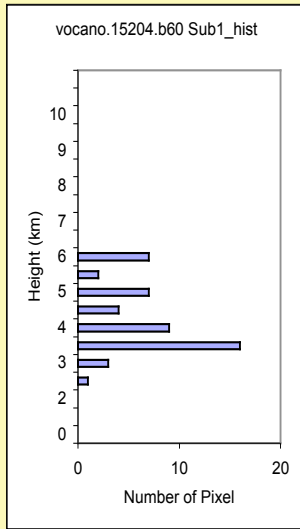
Mt. Etna Volcano October 27, 2002

MISR Orbit 15204

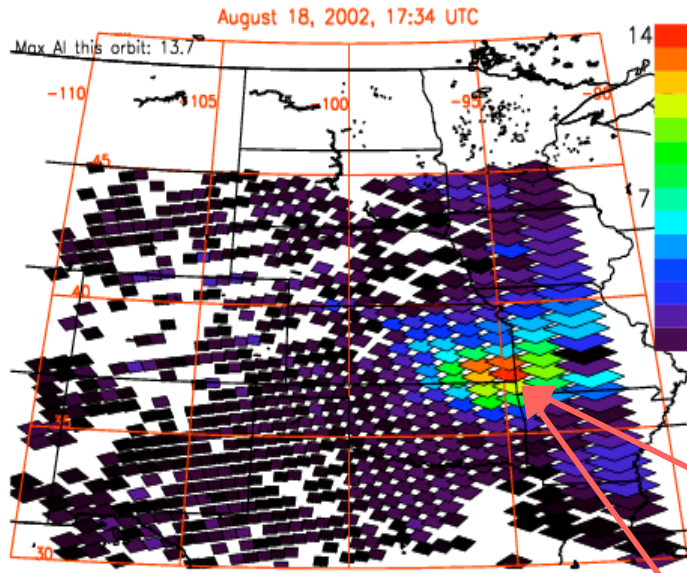


Mt. Etna Volcano, Plume Height Analysis

October 27, 2002



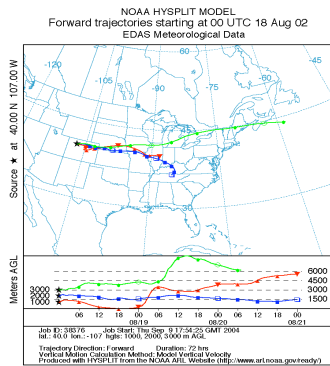
TOMS Aerosol Index (AI)



Direct detection of smoke in the upper troposphere

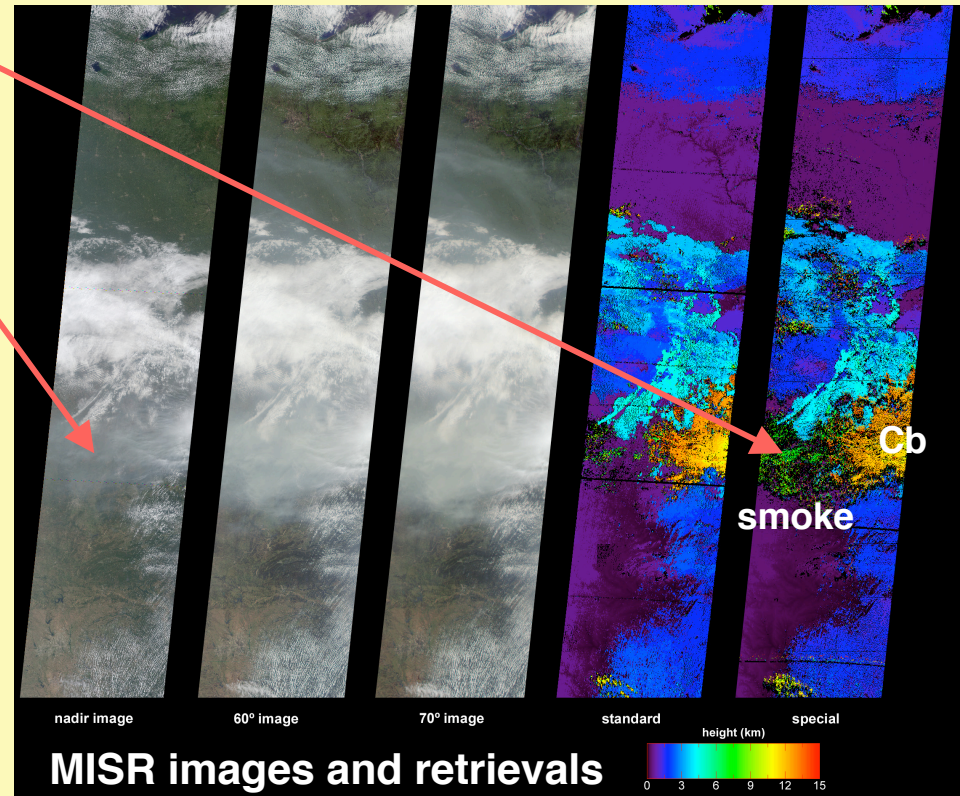
August 18, 2002: Elevated values of TOMS AI were observed near the Missouri-Oklahoma-Kansas-Arkansas border

MISR measures height of Cb cloud and cirrus streamers (11-13 km) and smoke pall (7-9 km)



NOAA HYSPLIT back-trajectories suggest Mt. Zirkel fire complex in Colorado as source

Mt. Zirkel fire plumes: MISR 60° view looking north, August 16, 2001



MISR images and retrievals

