

Summary of 6 May 2008, TIGERZ measurement campaign

Measurement Objective-Provide data for joint retrieval of microphysical and radiative properties of aerosols from ground-based, CALIPSO and other satellites and airborne observations.

The Measurement Plan: Deploy a series of ground-based instruments in the daylight ground track of the A-Train constellation emphasizing the CALIPSO 100m footprint and 20 km averaging (see figures 1 to 3 for site locations).

Abstract: The A-Train overpass was nominally 1:30 pm local time (0800 GMT). Eight on track ground-based AERONET stations and four handheld sun photometers successfully collected data throughout the day. Two of three in situ aerosol sampling systems were operating. Two out of three near on-track lidars were operational, and three forecast aerosol models are now producing operational products for the I-G Plain. The airborne campaign is scheduled to commence May 15.

Weather: Temps ranged from 27 to 47°C, cloud free skies most of the day and hazy.

AERONET Observations: Conditions were favorable for taking all sun and sky measurements and computing aerosol retrieval products.

Site Name	AOD (675 nm)	Angstrom Exp.	Precip. Water	SSA(670)
Almora	To be deployed	NA	NA	NA
Nainital	0.37	0.70	1.1	0.92
Pantnagar	0.70	0.50	2.6	0.92
Bareilly	0.73	0.40	2.6	0.92
Kanpur	0.72	0.22	2.6	0.93
Chitrakoot	To be Deployed	NA	NA	NA
VSK	To be updated			
Mobile N	0.77	0.27	2.55	0.93
Mobile C	0.74	0.18	2.75	0.92
Mobile S	0.72	0.17	2.56	0.94
Handheld N	0.67			
Handheld E	0.69			
Handheld W	0.67			
Handheld S	To be updated			
REGIONAL Observations:				
Gandhi College	0.71	0.50	3.7	0.91
New Delhi	0.72	0.45	2.25	0.93
Pune	To be updated			
Lahore	To be updated			
Karachi	0.62	0.14	2.0	
EVK2 (Nepal)	To be updated			
Namco (Tibet)	To be updated			

Three **mobile AERONET sites** were established by 8 am and continued to 5 pm within the Calipso track foot print nominally 20 km apart. Sky almucantars and PP were made hourly throughout the day, between 1 and 2 pm additional PP were made bracketing the overpass time. All sites reported cloud free conditions during this time. Additional sky observations were recorded.

Four **microtops handheld sun photometers** were located at nominally 2.5 km N, S, E and W of the central mobile sites for three minute triplet observations from 1 to 2 pm to assess local aerosol variations.

***In Situ* particulate samplers:**

The **Drum Sampler** began on May 5 and is expected to continue samples at 5 minute resolution until 26th of May at which time a new drum head will be installed for an additional three week sampling.

A **GRIMM optical particulate counter** was run between 10 am and 3 pm at the central site and IIT Kanpur to estimate particulate loading.

Lidar Systems: The primary lidar at Kanpur had a permanent laser failure May 2 and will not be replaced until early June if at all. A 532 nm lidar system is operated at night Monday and Wednesdays at Nainital. A second lidar is operated at the VSK ISRO site but I currently have no details on this system.

Aircraft Summary: No **aircraft data** flights were made.

Satellite Summary:

Rapid response Imagery is provided as well as the standard AOT products from MISR, MODIS, Omi and Parasol, (Table 2 but not yet available). The ‘Expedited’ Calipso imagery is available at <http://tinyurl.com/6mlms5> and Fig. 5.

Satellite	AOD	Angstrom/Fine mode	Comment
Terra Modis			To be updated
Terra MISR			To be updated
Aqua Modis			To be updated
Calipso			To be updated
Aura AIRS			To be updated
Parasol			To be updated
GOCART Predict			To be updated

Thanks to everyone that has pulled this together. Future updates will be posted on the website <http://tigerz.gsfc.nasa.gov/index.html>. I look forward to the results generated from this two-month campaign. bh

PS: For the real poop see the TIGERZ blog at: <http://tigerz.wordpress.com/>

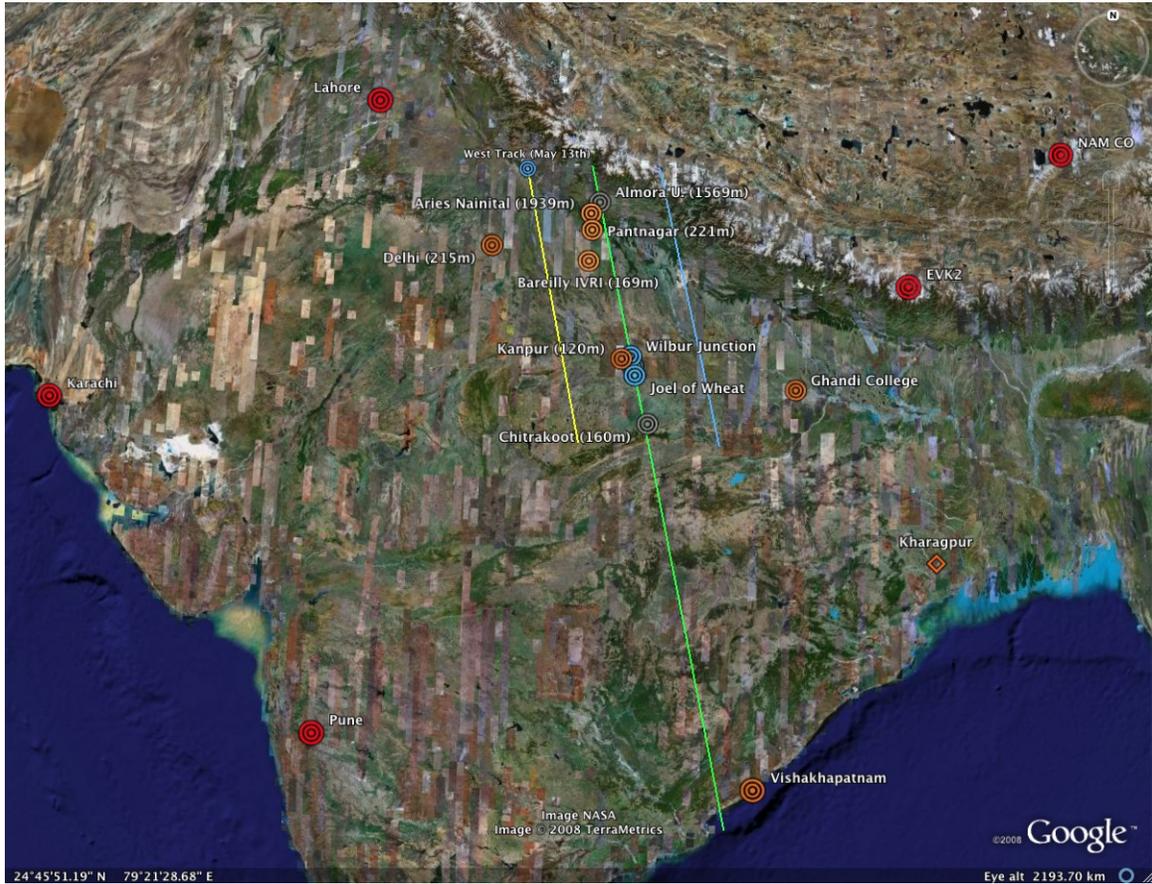


Figure 1, The Tigerz A-Train tracks with AERONET sites Permanent (brown bulls eye), temporary (blue bulls eye), and red regional permanent sites (red bullseye)

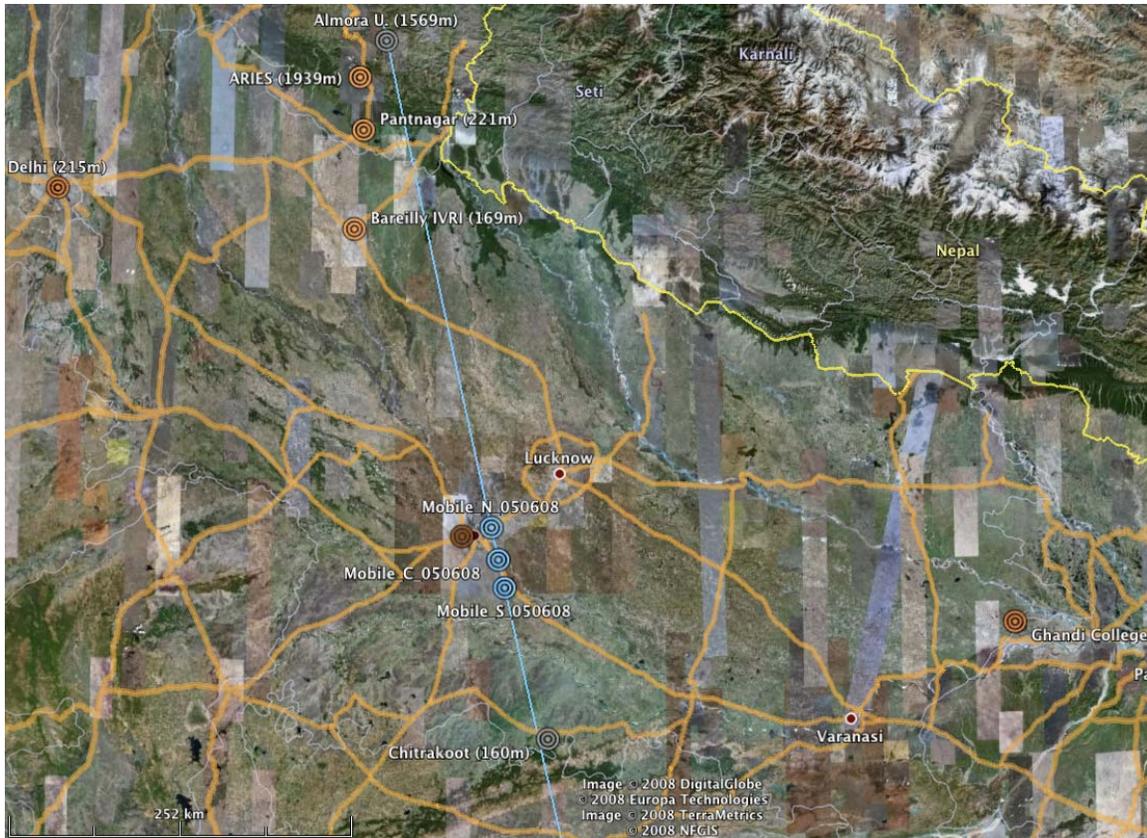


Figure 2 shows the I-G Plain 'Central' A-Train track showing the permanent and temporary sites (brown bulls eye) and the on track mobile sites (blue bulls eye).



Figure 3 shows the three mobile sites (blue bulls eye) approximately 20 Km apart and the four handheld sunphotometer sites (yellow bulls eye) ~2.5 km around the central mobile site.

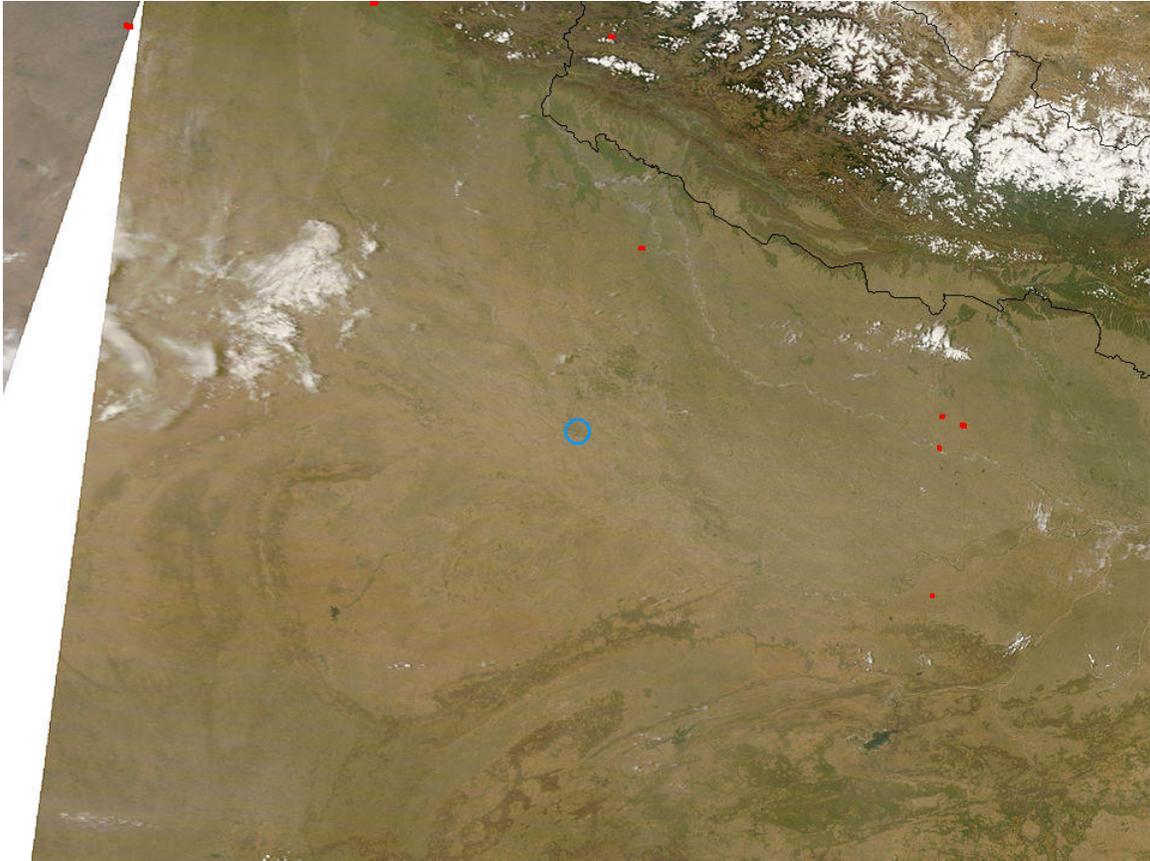
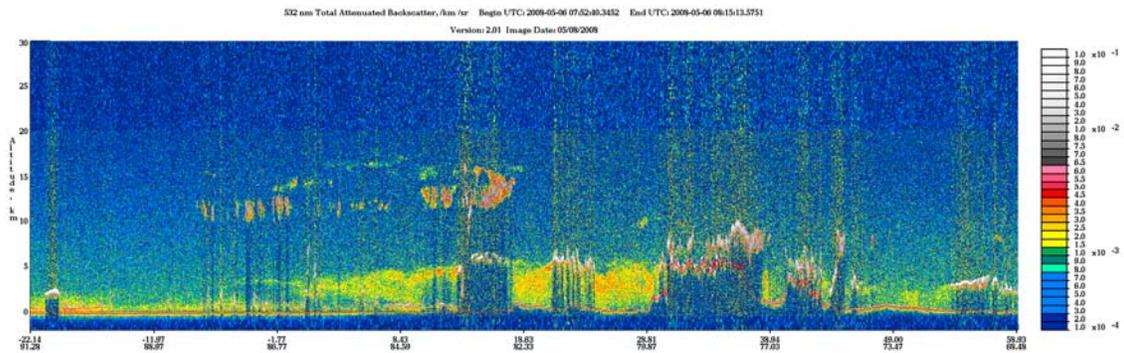


Figure 4, May 6 Aqua Rapid Response Modis imagery centered on Kanpur (blue circle).
Image size: 1280 X 940 km



□ Kanpur

Figure 5, Calipso track of 532 Total attenuated backscatter, /km/sr as a function of altitude and Latitude. The products for this track are available at: <http://tinyurl.com/6mlms5>. Note that Kanpur's latitude is $\sim 26.5^\circ$ N.