

**From:** Holben, Brent N. (GSFC-6180)

**Sent:** Tuesday, March 27, 2012

Hello Folks,

As we approach the end of March, I wanted to provide a brief summary of our month's efforts.

The numbers: There were/are 51 AERONET sites operating in our region of interest in East Asia including SE Russia, eastern China, S. Korea and Japan. Casting the net toward SE Asia would include more from Hong Kong and Taiwan. Additionally there are the five sites with our affiliated MOSTap network near coastal Tianjin. The DRAGON webpage ([http://aeronet.gsfc.nasa.gov/new\\_web/DRAGON-Asia\\_2012\\_Japan\\_South\\_Korea.html](http://aeronet.gsfc.nasa.gov/new_web/DRAGON-Asia_2012_Japan_South_Korea.html)) has been reorganized and populated with many more and useful links including daily average AOD maps over Seoul and Osaka, aerosol forecast models, lidar, satellite animations and other contributing data sets. If you wish to add a link please contact David Giles at [david.m.giles@nasa.gov](mailto:david.m.giles@nasa.gov).

I note that March had no major dust outbreaks over the region yet on average the Angstrom exponent was quite low averaging between 0.89 for Xinglong NE of Beijing, to 0.95 at Yonsi Univ in Seoul to 1.03 at Fukue in West Japan and 1.03 in Osaka. Clearly these average numbers are influenced by ubiquitous dust aloft. The region especially Japan was very cloudy the first half of the month. There were several fine mode aerosol events across the region that exceed 1. at 500 nm and low aerosol periods with AOD of 0.2 at 500 nm.

We had two airborne campaigns and plans for a third.

Kudos to Joel Schafer, Peter Kenny, David Giles and Mikhail Sorokin for making the long trip to participate in the deployments. A big thanks and congratulations to the Korean and Japanese staffs, site managers, and PI's for making this all possible.

bh

The east to west summary–

**Zhengqiang Li (MOSTap (China) 5 cimel sites:**

(1) Ground-based sites begin observation from 02 March, 2012 except for two sites (Tanggu & Tiangang) from 01 March, 2012. Up to 22 March, most of CE318 work well except for one site may lost several hours data due to interfere of data

transfer by aside 3G base station.

(2) Airborne flights was slightly delayed due to flight control in the experimental region. The first test flight was performed on 21 March, 2012 and DPC and Micropol worked without mechanical problems. Two formal flight has been planned this week-end.

(3) Daily mean AOD summary of MOSTap ground observation are attached and further daily averages to be posted on DRAGON website.

### **Jhoon Kim (DRAGON Korea) 25 AERONET sites:**

All Cimel sunphotometers in Korea are working well except the one at Pusan National Univ., which is going to be swapped to a different one. Pandora is working fine at Seoul and Pusan. Lidar measurements detected Asian dust over the last weekend(March 24–25th). Three flights of airborne campaign are scheduled during the period of April 20th–30th with high-volume sampler, CO analyzer, nephelometer, OPC, and CPC. The E–W track along the southern border of Seoul and N–S track along the west coastal line of Korea are planned. Other four flights will be allocated for gas measurements. See the aircraft details below.

### **Itaru Sano (Dragon Japan West) 21 sites:**

Three sites are established in the Tokyo region (DRAGON Japan East) and two of the three sites from Fukue Island airborne campaign were removed to be re-established in the Osaka Mega city. The network is running well but 3 sites are only irregularly updated. Note the NEIS lidar link for the network in Japan and Korea.

Prof. Hatakeyama group (Grant-in-Aid for Scientific Research on Innovative Areas, ASEPH project) successfully made the aircraft campaigns on 10, 11, 13 and 14th in March in order to get the in-situ aerosol information as well as chemical species over East-China Sea and Fukue Island in Japan. DRAGON-JP-west group also deployed three AERONET instruments during the campaign.

Furhermore AERONET-fellows as Brent Holben, Itaru Sano, and Masatoshi Yonemitsu did the AOT measurements at three different altitudes with Microtops-II to investigate the vertical profile of aerosols during the campaign. It is of interest to mention that a heavy anthropogenic aerosol event was captured on March 10 and moderate aerosol events were also captured on other days during the period.

### **Korean airborne campaign details:**

Aircraft: King Air

Dates: April 20–30, 2012

Flights: 2 or 3 flights out of seven designated for DRAGON

Flight duration: 5–6 hours

Time of day: Not known – but should encourage early morning and late afternoon

Profile sites: Not determined (expected to be one or two per flight) depending on weather

Profile Altitude Range: 1 – 5 km (over land) and 0.5–5km over ocean

Flight Paths: 1 east–west across the northern part of country (and pass just to south of Seoul) and 1 or 2 north–south along west coast.

Instruments to be placed on the aircraft in order of priority:

High volume sampler

CO analyzer

Nephelometer (scattering)

OPC (0.56 to 32 um radius)

CPC

Aethelometer (absorption but long sampling period– 20 minutes)

Measurements of the full size distribution, scattering, and absorption measurements were encouraged.

At the moment, no fine mode measurements smaller than 0.56 um radius will be measured on the aircraft. Perhaps it possible for NASA to provide any instruments (e.g., PSAP, SP2, UFSPS, etc.), which are not available here?

NIER sites have the following ground measurements:

SO<sub>2</sub> analyzer

NO<sub>y</sub> analyzer

O<sub>3</sub> analyzer

CO analyzer

VOC sampler

N<sub>2</sub> Gas (3L)

PAN analyzer

MOSTap AOD summary plot:

