Ground Based Instruments

Instruments

- NPOL Radar – *Las Tablas, Panama*
  - *15 Jul to 13 Aug*
- NATIVE - *Las Tablas, Panama*
  - *9 Jul to 9 Aug*
- Ticosonde – *Costa Rica*
  - *16 Jun to 12 Aug*
- Ticosonde – *Galapagos*
  - *1 Jul to 12 Aug*
- Rain Gauges/ Met data *-Panama*

NPOL Radar

- S Band Polarimetric Radar
- 1.4 degree beam
- 850 KW Peak Power

Products

PPI reflectivity
CAPPI
RHI
Sector Scan

Measurements

Reflectivity
Velocity
Spectral Width
Differential Reflectivity
Differential Phase
Linear Depolarization Ratio

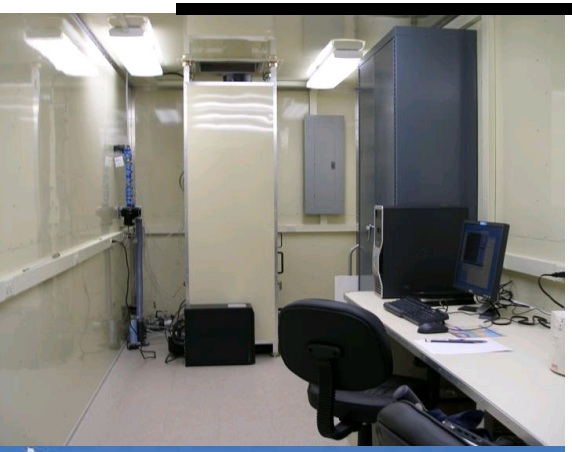
Operation Mode

24/7 from 7/15 to 8/13
300 Km Scan
150 Km Volume Scan
7 min update during a/c ops

(Panama City)
Ciudad de Panamá
Panama
El Cerro
La Guarita Beach
150 KM

NATIVE

(www.meteo.psu.edu/~btaubman/Webpage/native.html)



Nittany Atmospheric Trailer and Integrated Validation Experiment

mobile research facility designed for:

- Satellite retrieval validation
- Ground-based complement to NASA field campaigns
- Mobile ozonesonde station
- Educational outreach
- Long term air quality monitoring
- Pollution transport and deposition

NATIVE Operations

Continuous Measurements

- Surface trace gases (TeCo)
- Surface aerosol size distribution (SMPS)
- Column ozone (UVMFR, Microtops)
- AOD (Cimel, UVMFR, MicroTops)
- Meteorology (R.M. Young)

Semi-Continuous

- Aerosol lidar (PSU)

Daily – Multiple/Day

- ECC ozonesondes (En-Sci, Vaisala)

*Gary Morris and Valpo Crew

NATIVE Payload

In-situ instruments:
TeCo 49C O_3 Analyzer
TeCo 48C-TLE CO Analyzer
TeCo 43C-TLE SO_2 Analyzer
TeCo 42C NO, NO_y Analyzer
TSI SMPS
*En-Sci ECC Ozonesonde Ground Station
Meteorological Instruments (10 m tower):
T, RH, P, WS, and WD
Remote Sensing Instruments:
*MICROTOPS II O_3 Monitor – Sunphotometer
(305, 312, 320, 340, 380 nm)
*Cimel Sunphotometer
(340, 380, 440, 500, 675, 870, 1020, 1640 nm)
YES UVMFR-7
(300, 305, 311, 317, 325, 332, 368 nm)
532 nm Aerosol Lidar

Logistics

- NPOL at “El Cerro”
- NATIVE at Cerro Cerrezuela
- Ames Ku Satellite Internet
- Wireless between NPOL and Native
- Cell phone service
- VHF radio
- Lodging in Chitre

7.790648, -80.276602
NATIVE
Las Tablas
El Cerro

NATIVE
© 2007 Europa Technologies
Image © 2007 DigitalGlobe
©2007 Google™
V elev 258 ft
Streaming |||||||||| 100%
Eye alt 2519 ft

Ticosonde TC^4 Radiosonde Program

Location: IMN launch site at Juan Santamaria Int. AP, Alajuela

Dates: 00 UT (6 PM) 1 July — 18 UT 12 August

Frequency: 4 times/day: July 1 — 12 August

2 times/day: June 16 — June 30

Data: 2-sec data ~ 10 meters, to ~28 km

Measurements: Temperature, RH, winds

Radiosonde: Vaisala RS92-SGP

Personnel: IMN radiosondistas, UCR students

Galapagos TC^4 soundings

Goals :

- Clear sky reference for TC4 observations
- TTL water vapor and ozone away from convection
- TTL dynamics: equatorial waves
- Radiosonde comparison

Program :

Location:	INAMHI launch site at San Cristobal, Galapagos 89.6°W, 0.9°S
Dates:	1 July — 12 August
Frequency:	Radiosonde: 2 times/day: 0:00 UT and 12:00 UT
	CFH/ECC : 10 soundings total
Data:	2-sec data ~ 10 meters, to ~28 km
Measurements:	Temperature, RH, winds
Radiosonde:	Vaisala RS92-SGP
Personnel:	INAMHI radiosondistas