

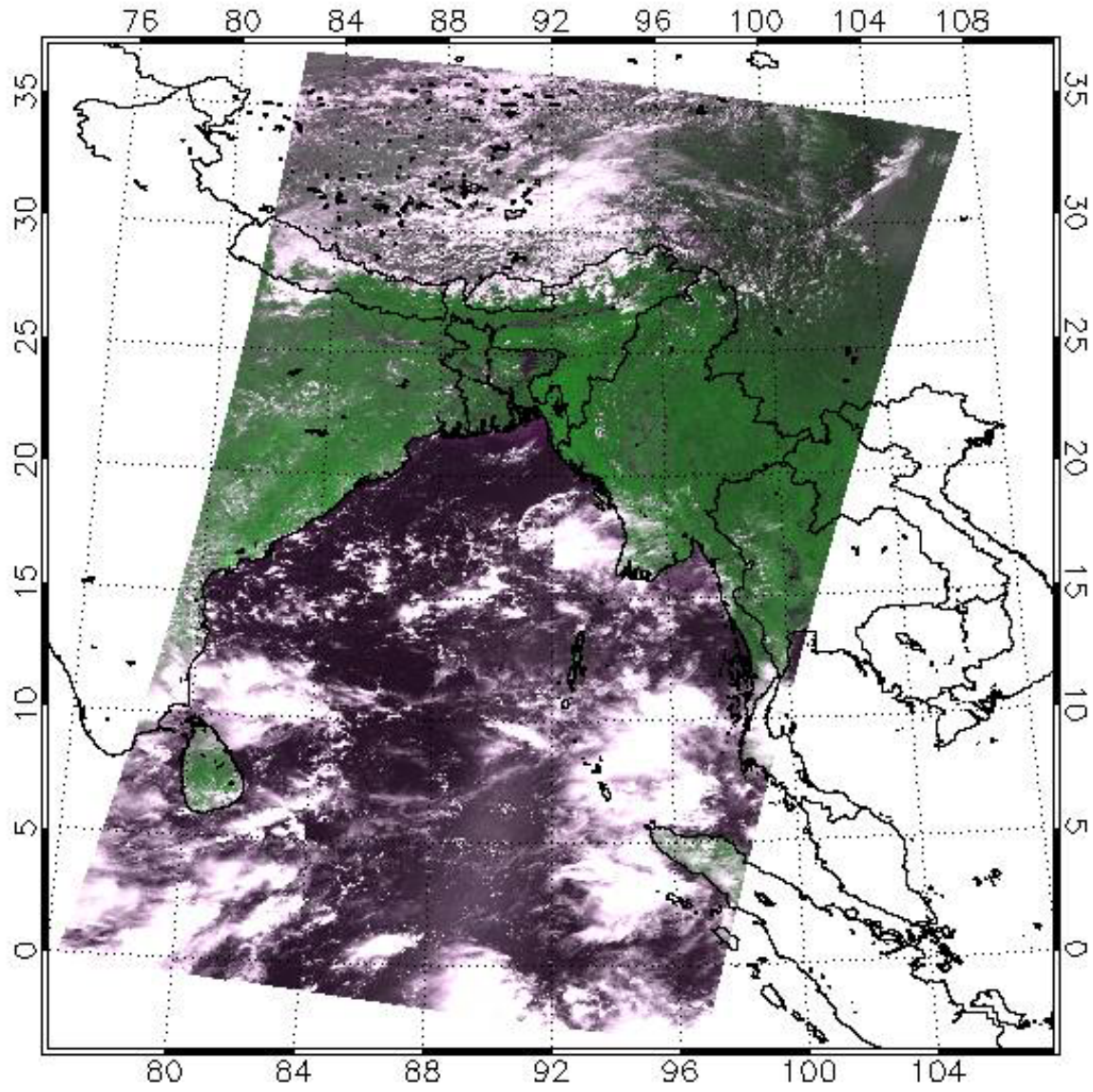


*Institute of Industrial Science
University of Tokyo*

SEASON

**South-east East Asia Satellite Observation Network
for Environment and Disaster Monitoring**

**Institute of Industrial Science
University of Tokyo**



Direct broadcasting systems for NOAA, GMS and MODIS

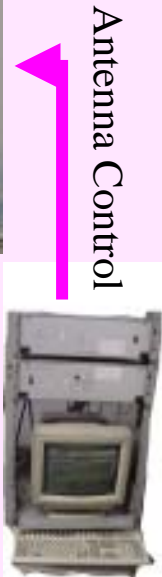
NOAA Receiving System



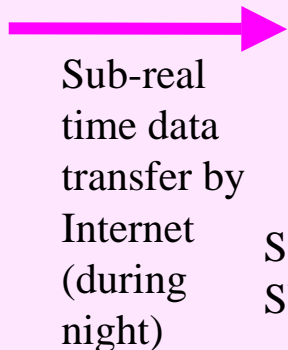
GMS Receiving System



MODIS Receiving System



Receiving station
at Bangkok



Satellite data server
SUN E6500



D3 type archive (100TB capacity)

IIS/UT Satellite Data Receiving System

NOAA/AVHRR	Station	Period
# IIS/UT	Tokyo	1986
# AIT(Thailand)	Bangkok	1997

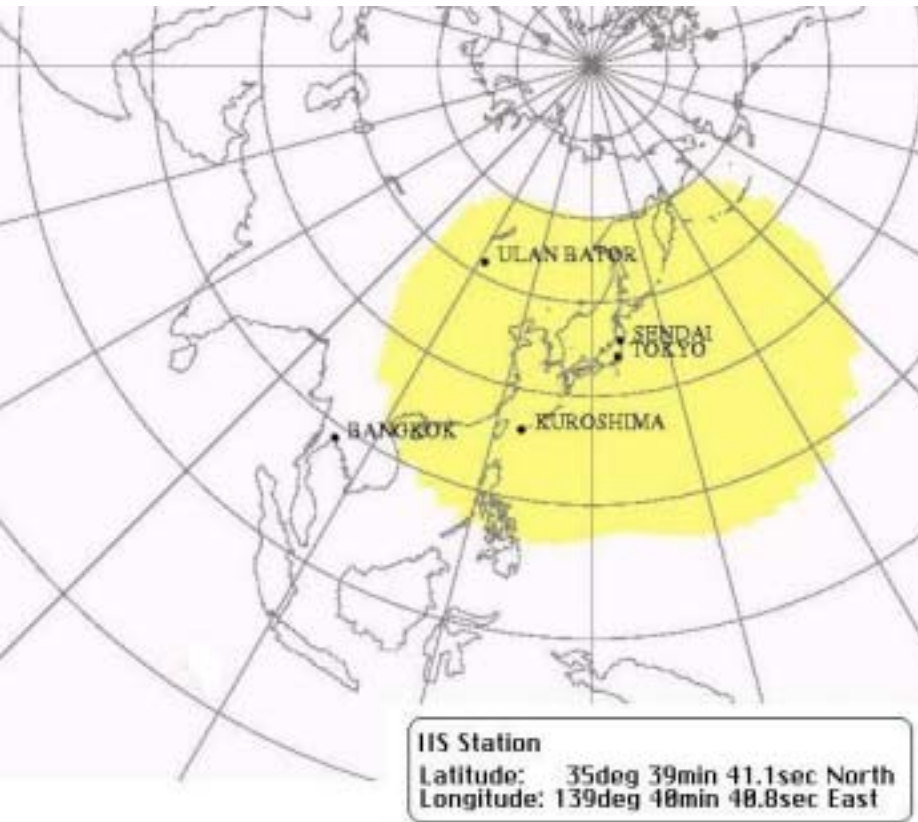
(Network with Chiba Univ., Tohoku University and NIES)



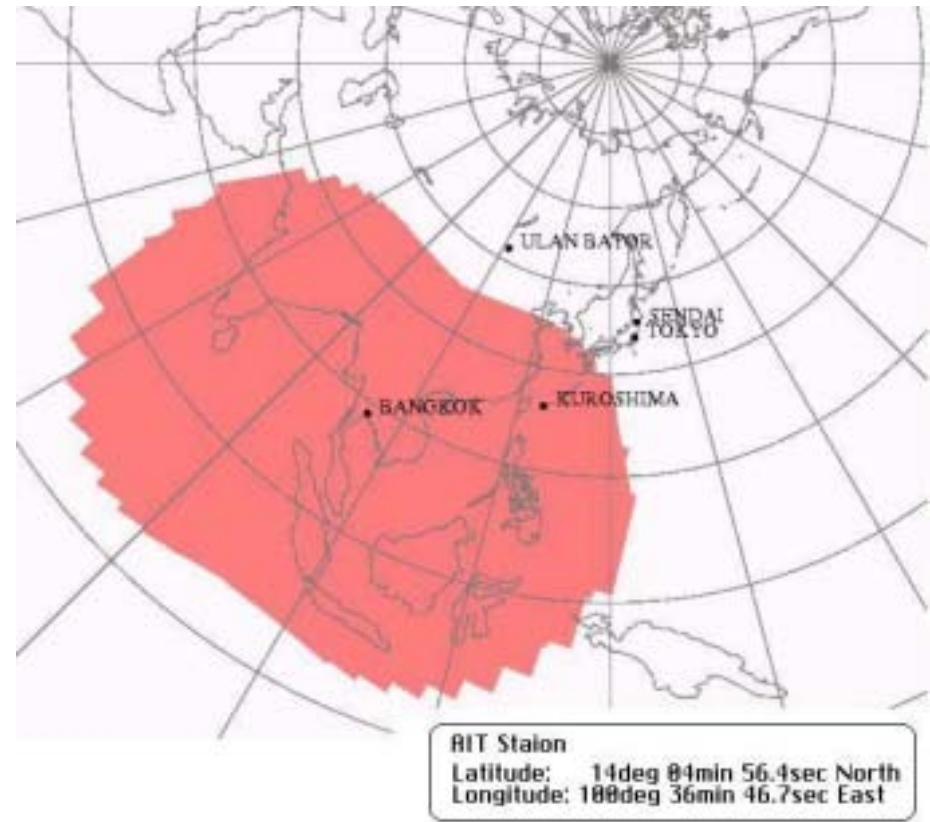
TERRA MODIS

# IIS/UT	Tokyo	2001
# AIT(Thailand)	Bangkok	2001

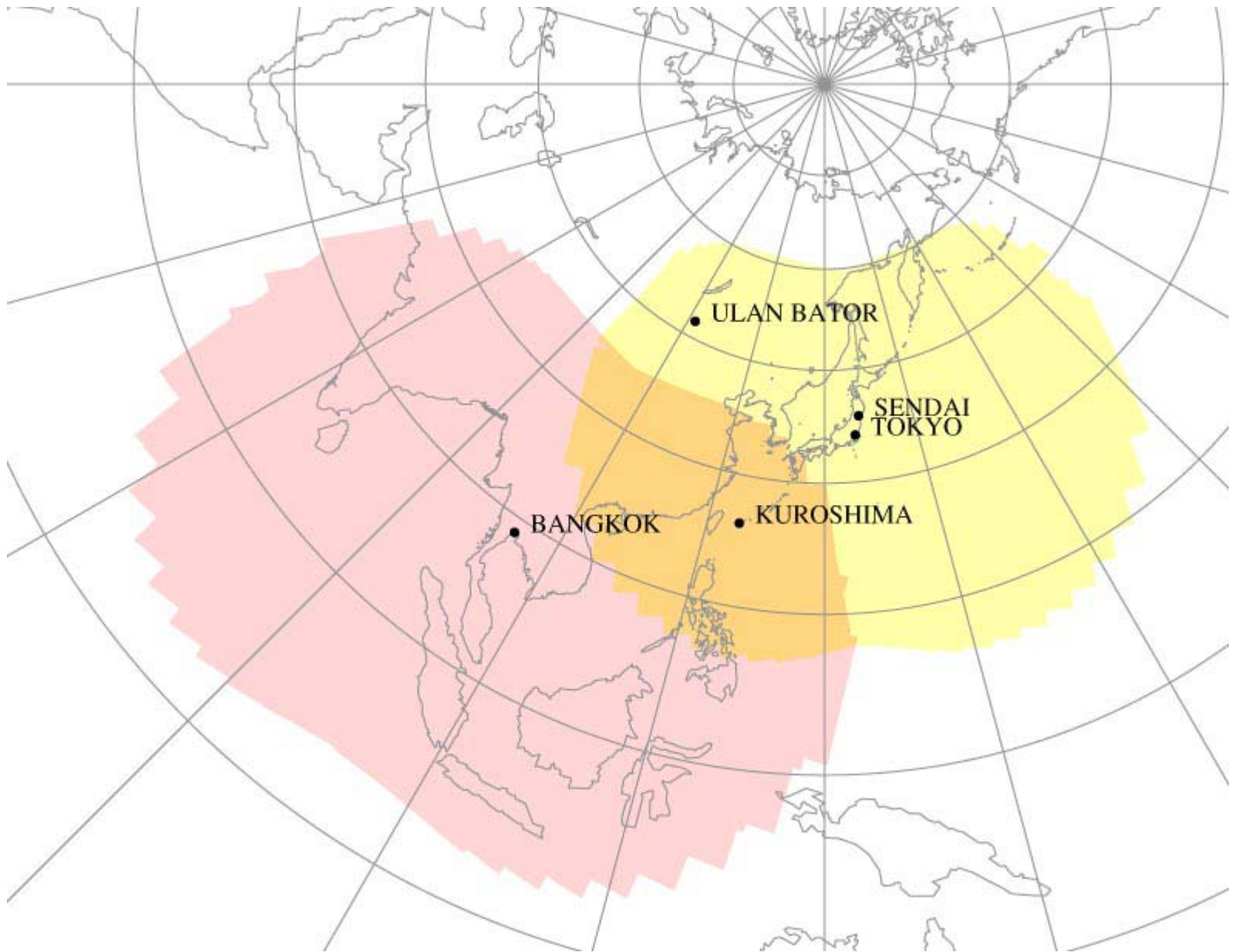
Data coverage

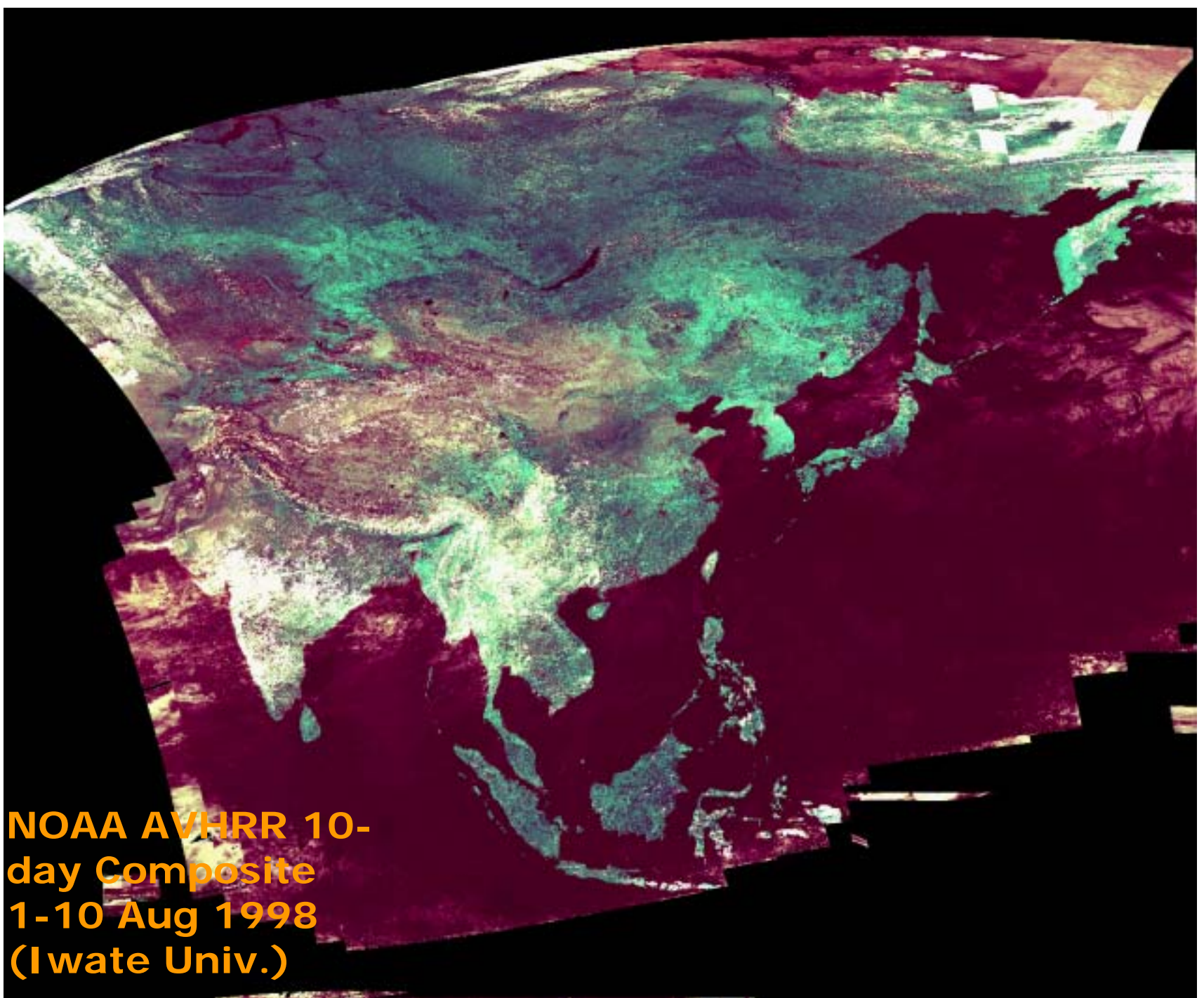


IIS/UT, Tokyo (1986~)



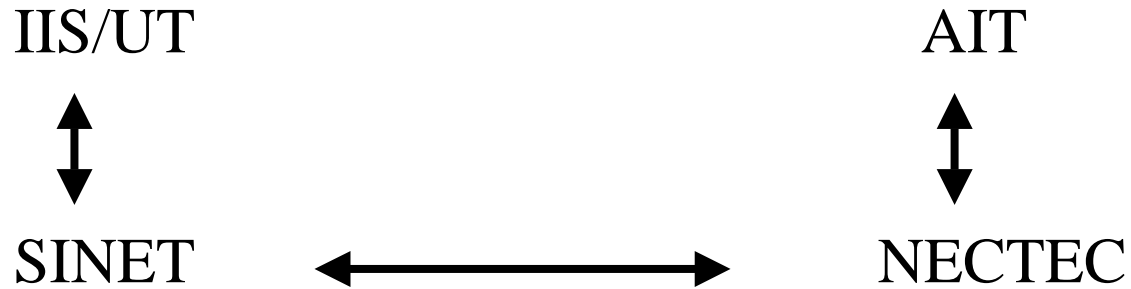
AIT, Bangkok (1997~)





**NOAA AVHRR 10-
day Composite
1-10 Aug 1998
(Iwate Univ.)**

Data Transfer from AIT to IIS



NOAA AVHRR

6scenes / day (2h/day)

TERRA MODIS

5scenes / day (5h /day)

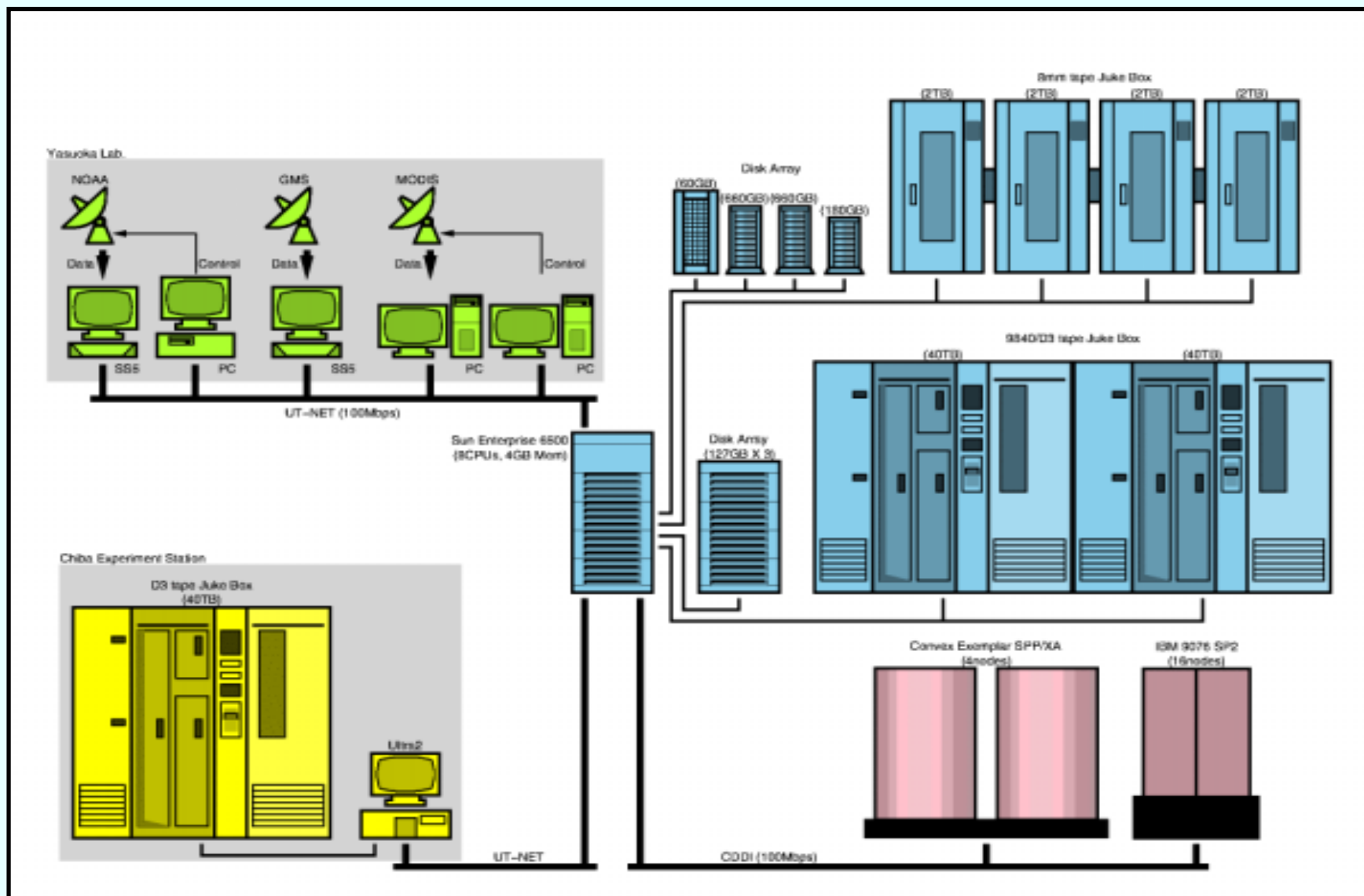


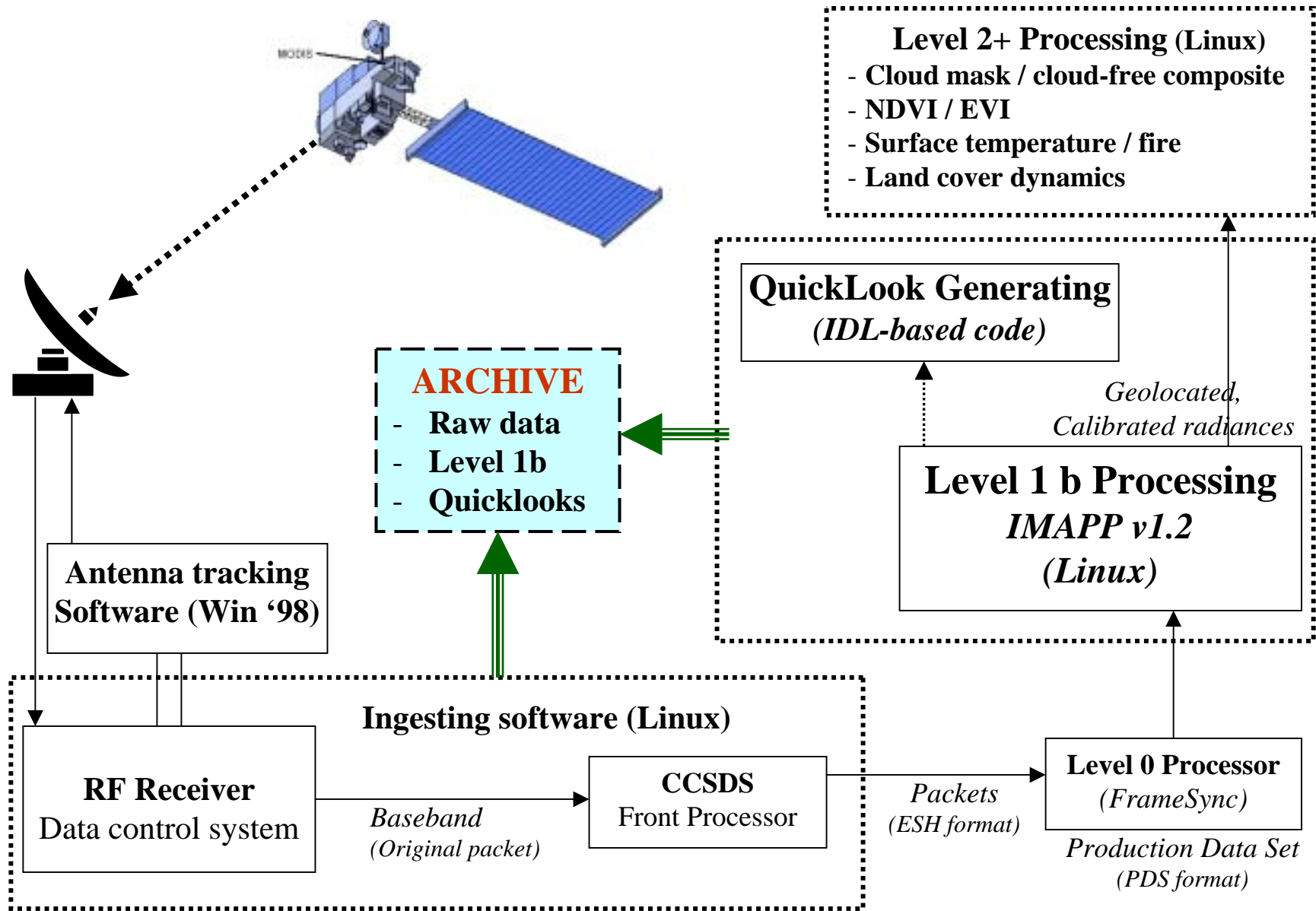
- 2.8m X/Y antenna disk;
- Motor Control Unit, Receiver, Antenna Interface Unit;
- Antenna control PC (Win 98) – Dundee satellite tracking system
- Data ingest PC (Linux RedHat 7.0)

Start operating
since May 18, 2001

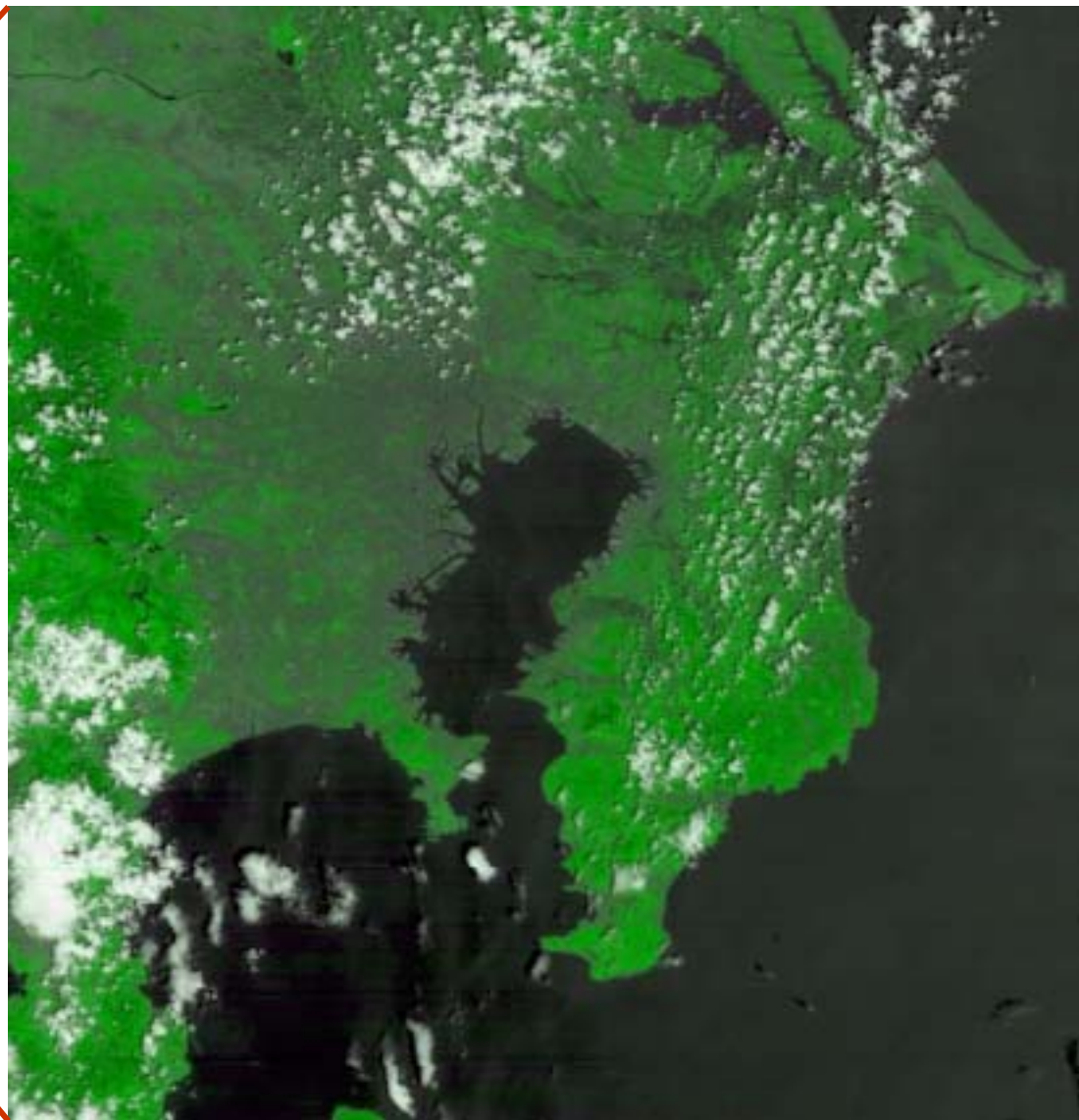
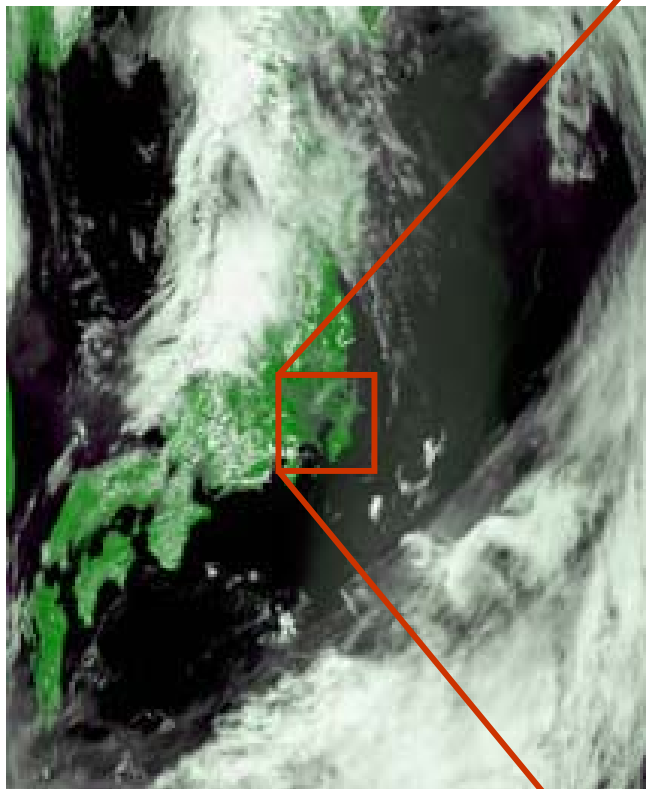


Details of the D3 type archiving system





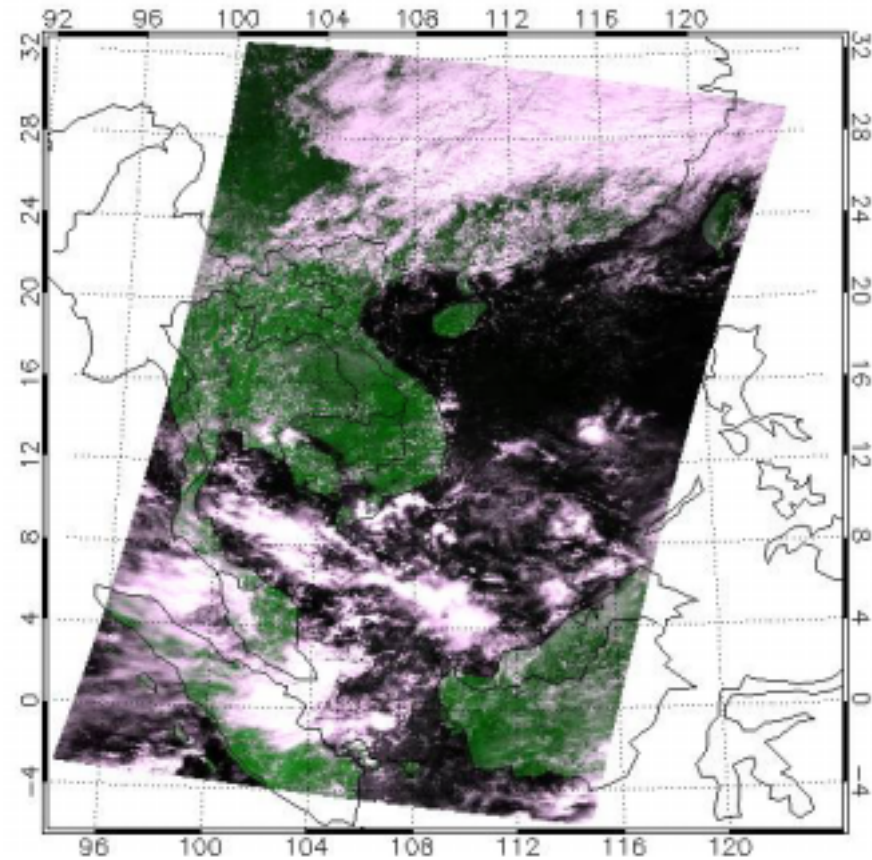
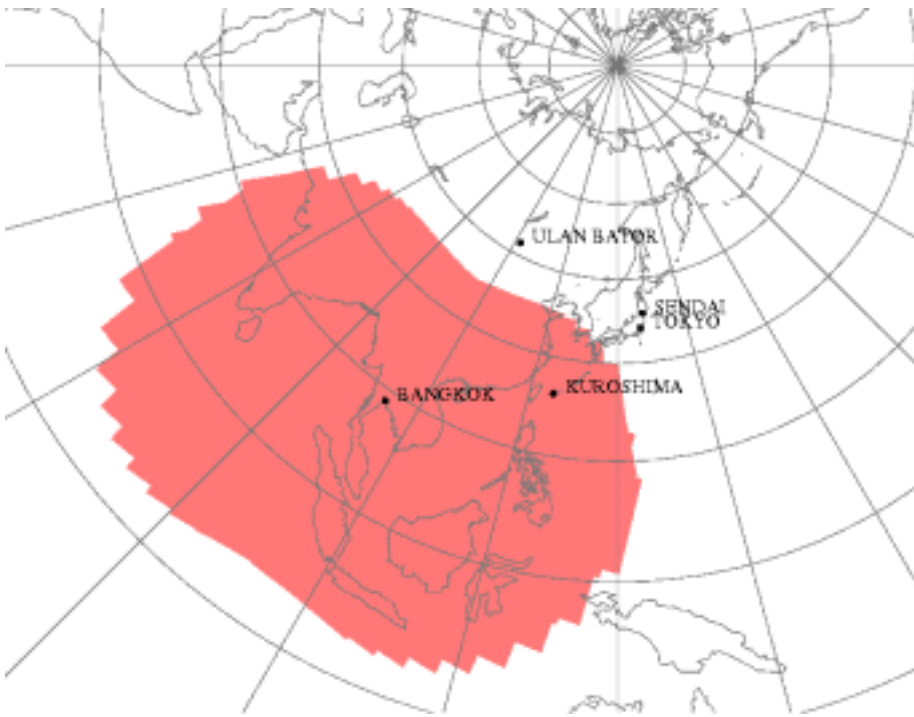
**MODIS image with 250m res.
received at IIS 18 May 2001**



AIT's MODIS system

- Provided by IIS, managed by ACRORS
- Raw data transferred to IIS through network for archiving (in experimental stage)
- www.acrors.ait.ac.th/modis/index.htm

**MODIS image received at
AIT at 10:36 on 02 Nov 2001**



Data Production & Archiving/Distribution

- IIS MODIS system acquire about 2-3 day-scenes & 2-3 night scenes, resulting in **4-5 GB** of raw data per day - Raw data in packet format with filenames of the form: YYYYMMDDHHMM
- The system then produces Level 1b earth-view data products (**6-8 GB/day**) - archiving at *komagome* server including
 - Calibrated, Geolocated Radiance (1000 m) – all 36 bands – (*.1000m.hdf)
 - Calibrated, Geolocated Radiance (500 m) – 7 reflected bands – (*.500m.hdf)
 - Calibrated, Geolocated Radiance (250 m) – band 1 & 2 – (*.250m.hdf)
 - MODIS geolocation file (*.geo.hdf)
- Quicklook images for each pass are produced and accessible on MODIS web - <http://yasulab.iis.u-tokyo.ac.jp/>
- Data distribution: free (through INTERNET)





Web references

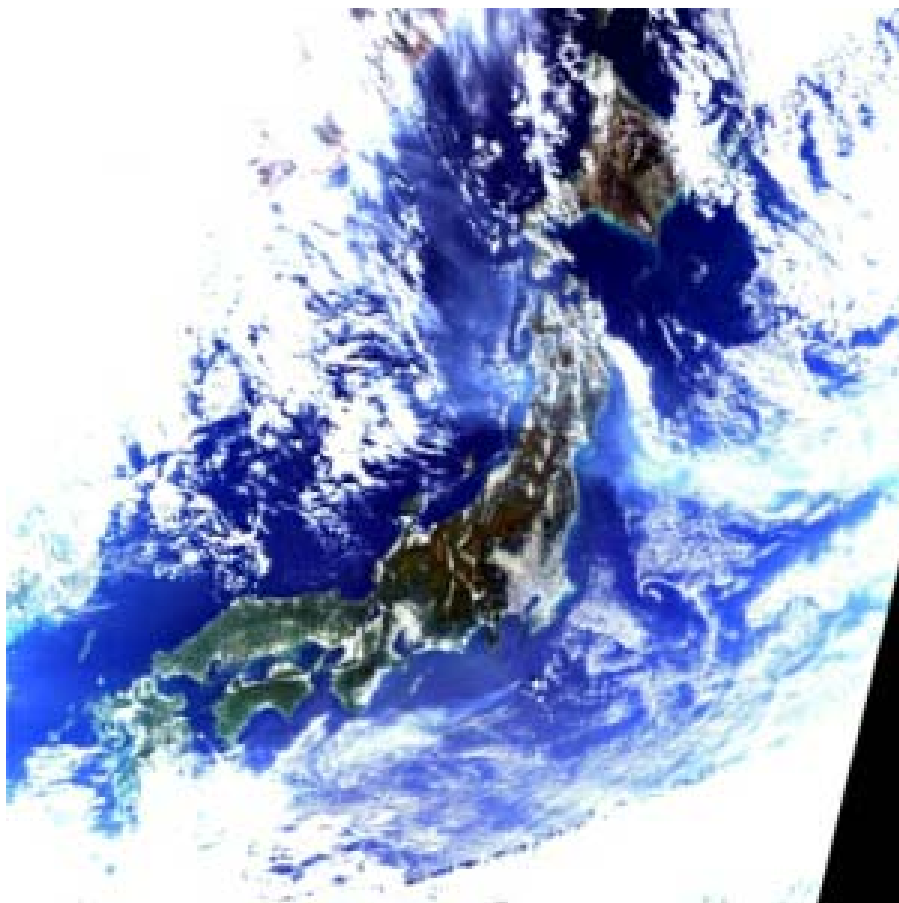
- For IIS DB station:

<http://yasulab.iis.u-tokyo.ac.jp/>

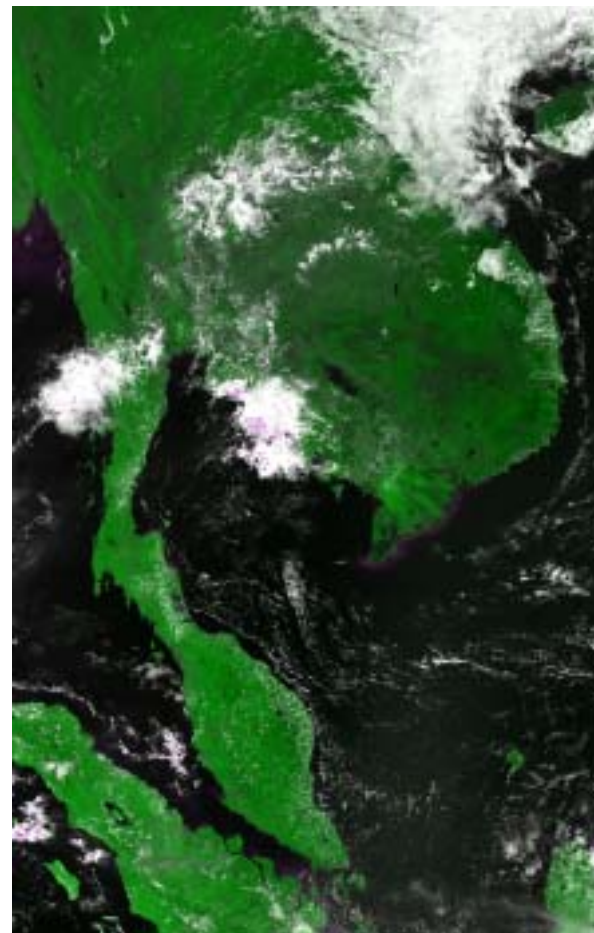
- For AIT DB station:

<http://www.acrors.ait.ac.th/>

MODIS pre-processing system on WWW

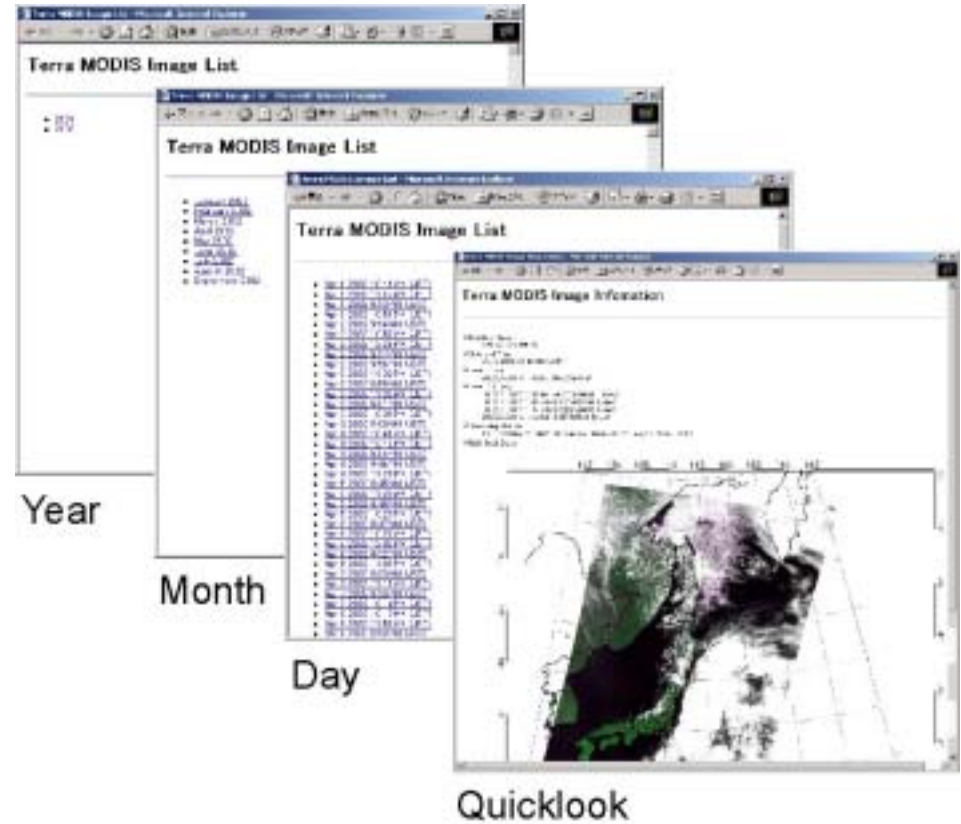


2002 Apr 4, 4:23 (UTC)
Terra MODIS at IIS, U-Tokyo



2002 Feb 4, 6:15 (UTC)
Terra MODIS at AIT in Bangkok

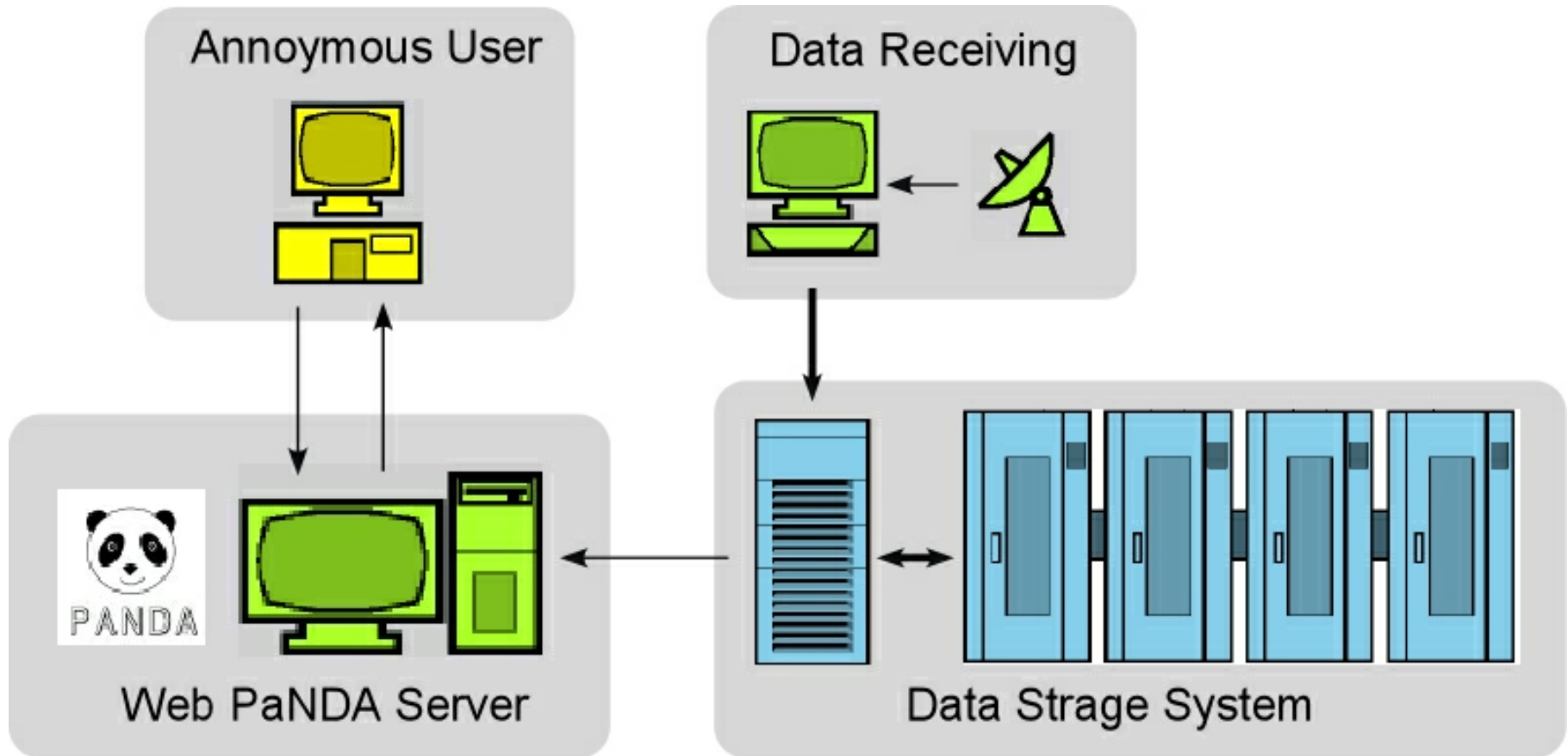
Graphical User Interface



<http://webmodis.iis.u-tokyo.ac.jp>

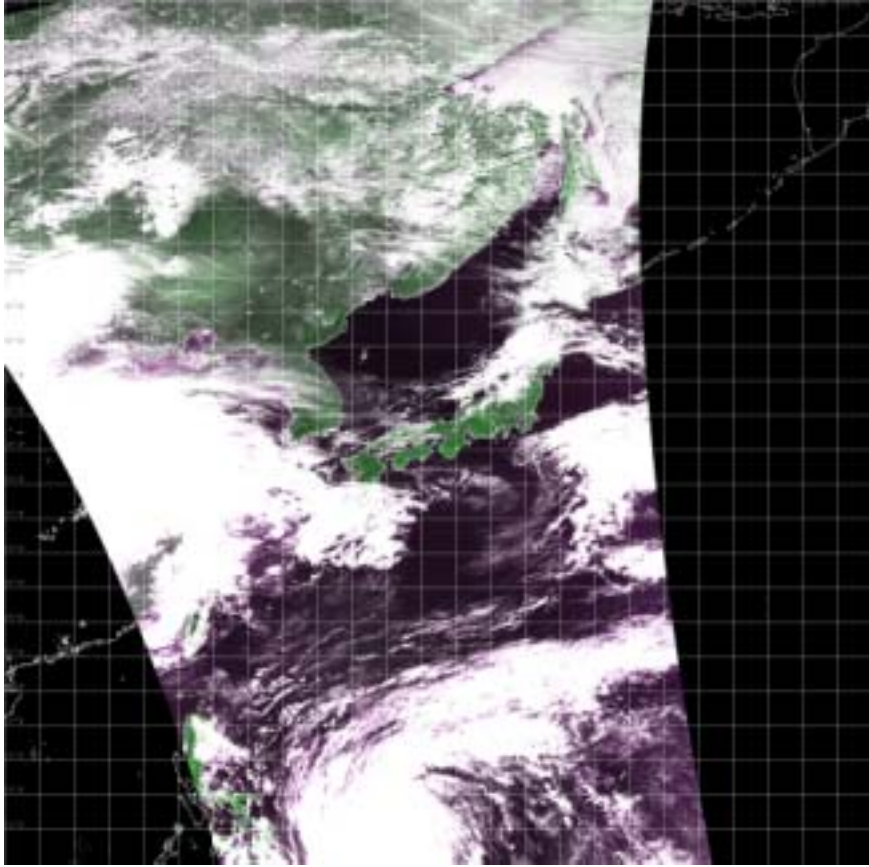
Hierarchical data search
by mouse click

Data Distribution via web

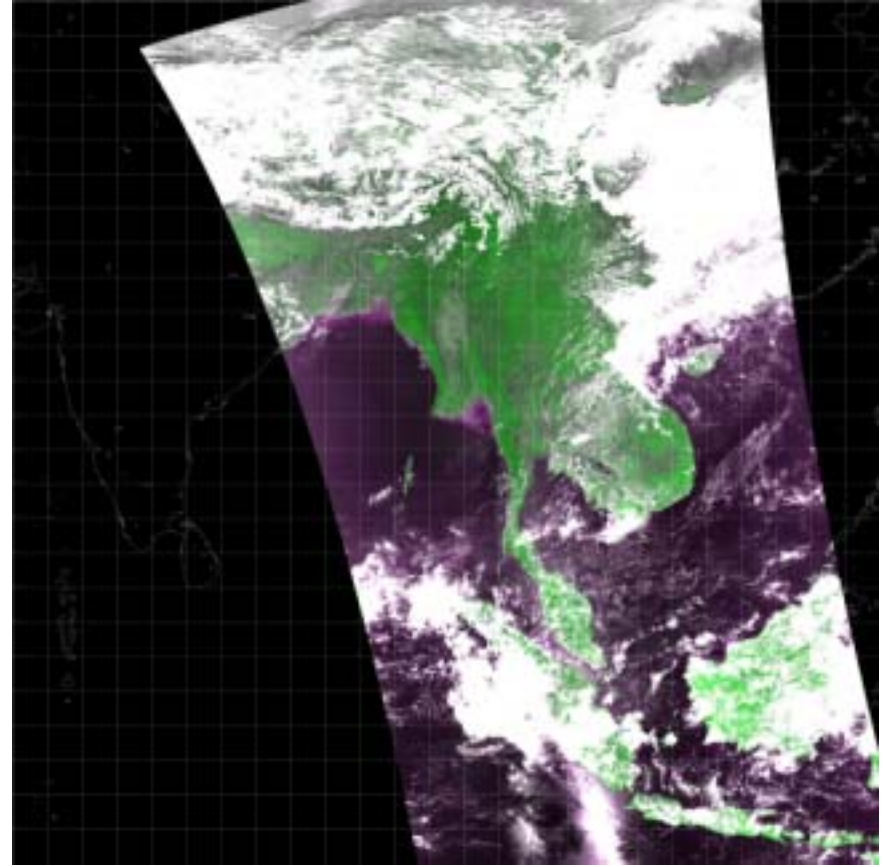


- Region extraction, radiometric correction and geometric correction
- E-mail communication, and data transfer from FTP

Examples of Image Rectification

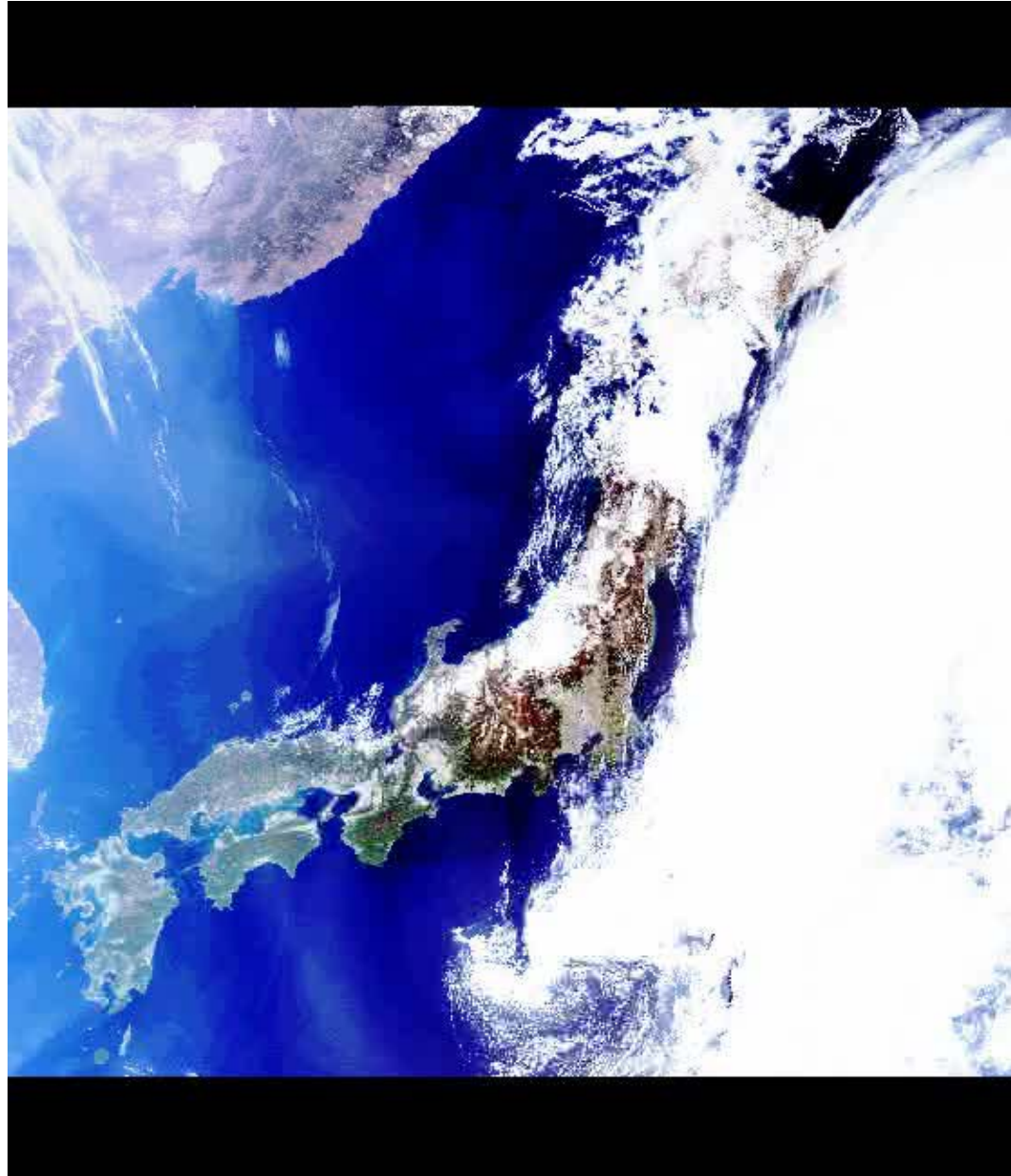


2002/3/4, 4:23 (UTC)
NOAA16 data received at Tokyo

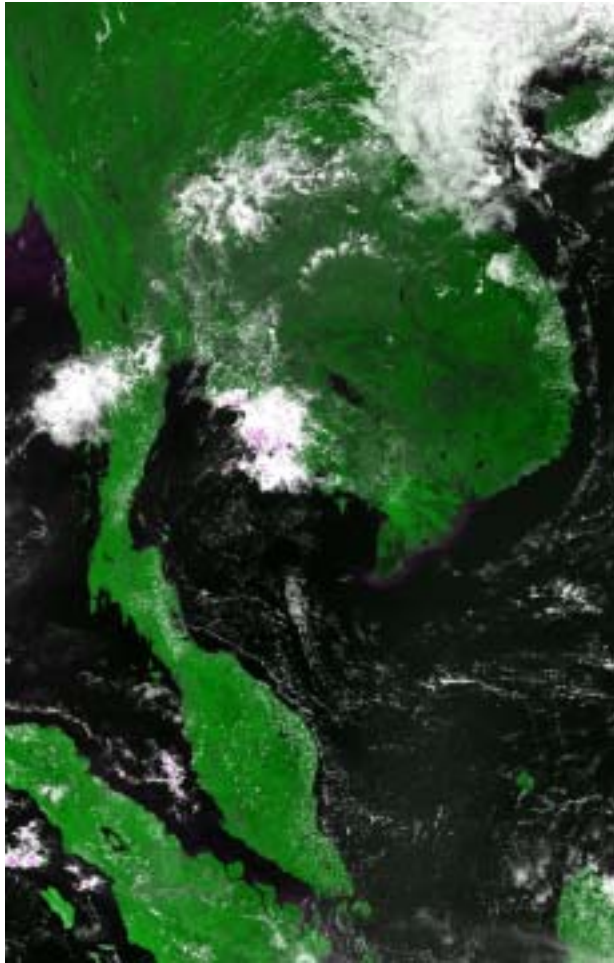


2002/3/1, 6:15 (UTC)
NOAA16 data received at AIT

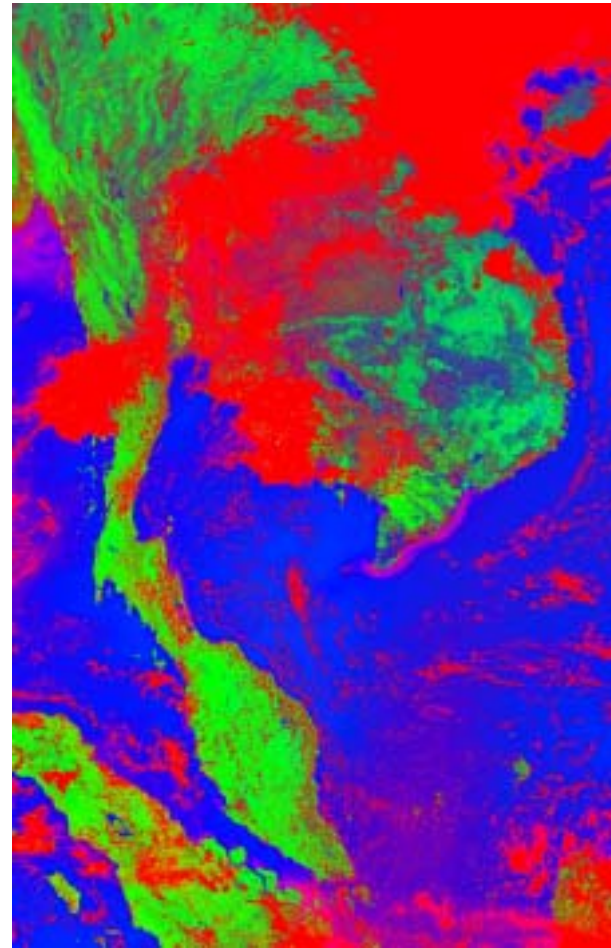
3 - D MODIS



VSW mixing ratio map by scaling between MODIS and ASTER

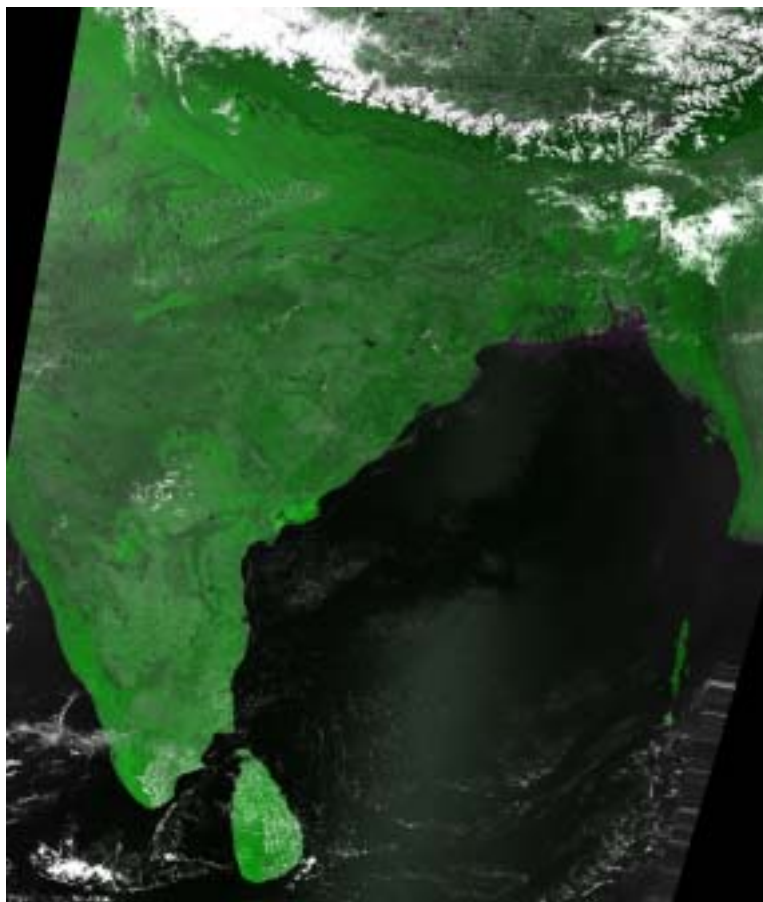


2002/2/4
MODIS-250m

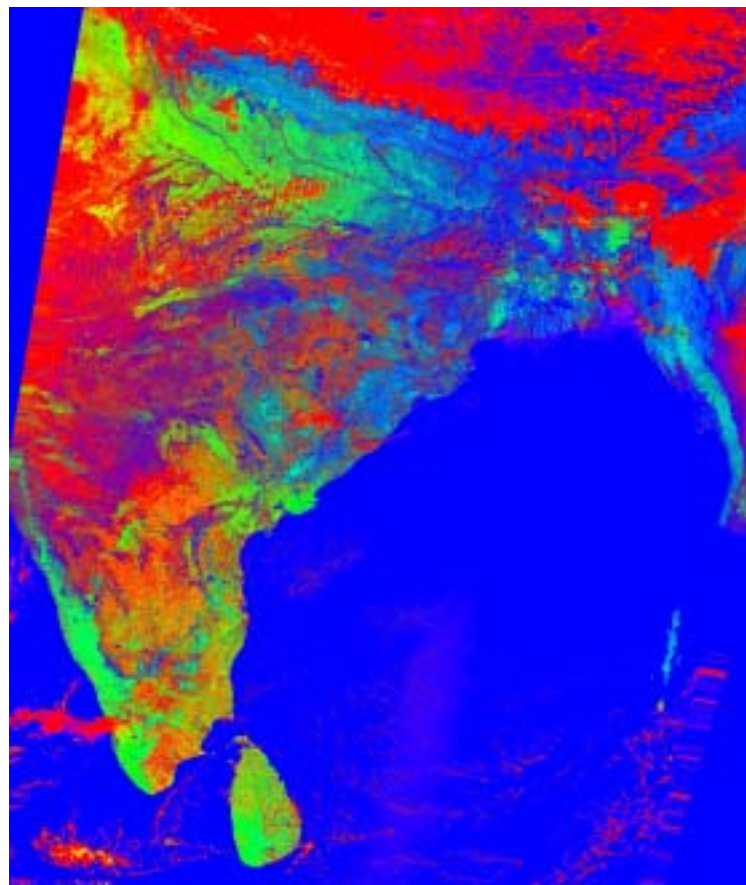


2002/2/4
VSW-MODIS-250m

VSW mixing ratio map by scaling between MODIS and ASTER



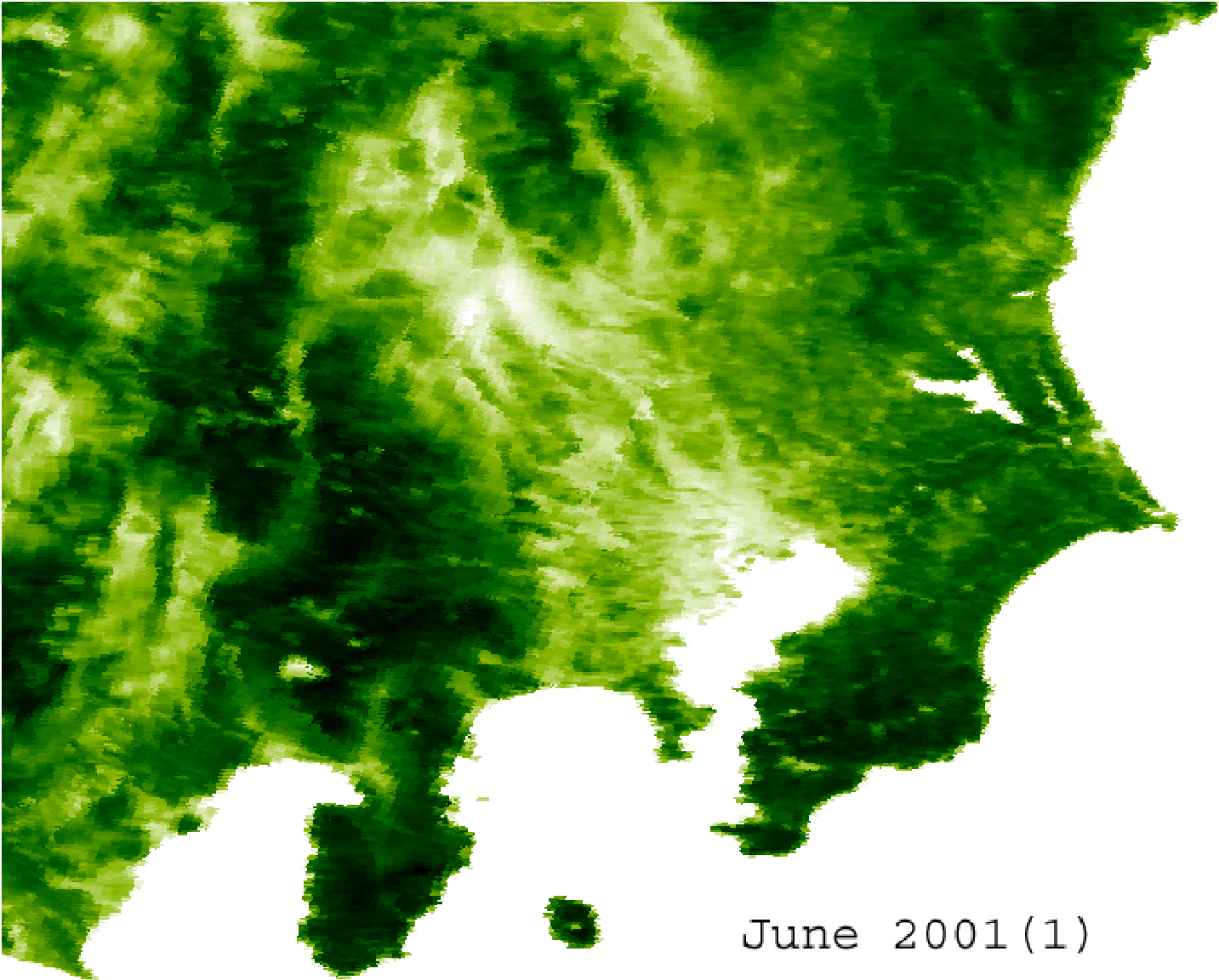
2002/3/10
MODIS-250m



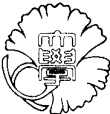
2002/3/10
VSW-MODIS-250m

Tokyo & Kanto Area

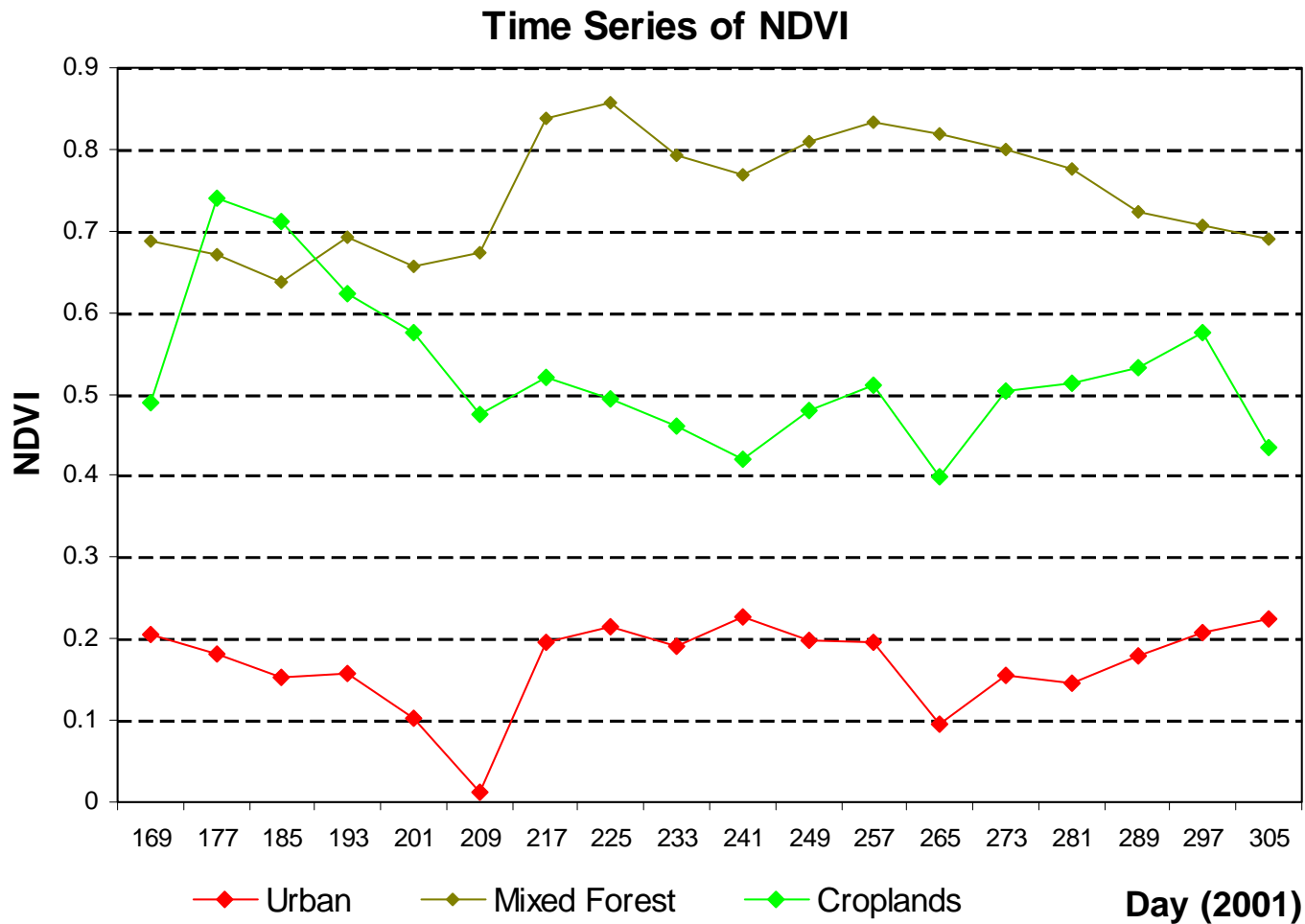
NDVI images –
June-Nov 2001



June 2001 (1)



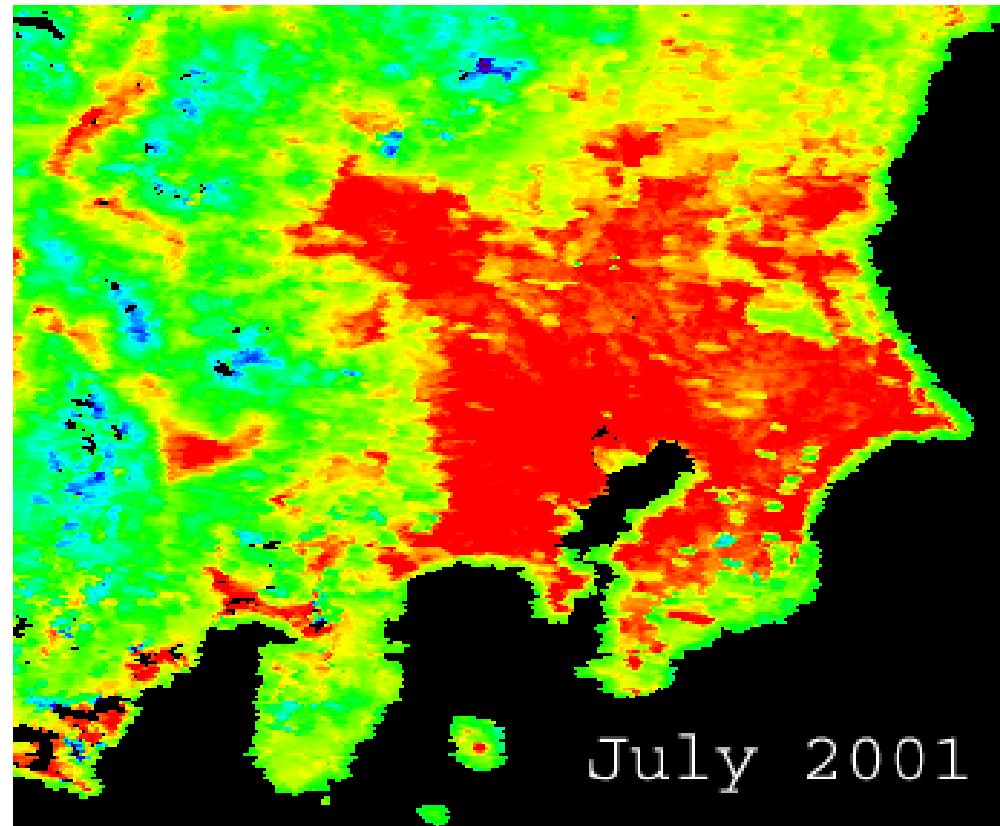
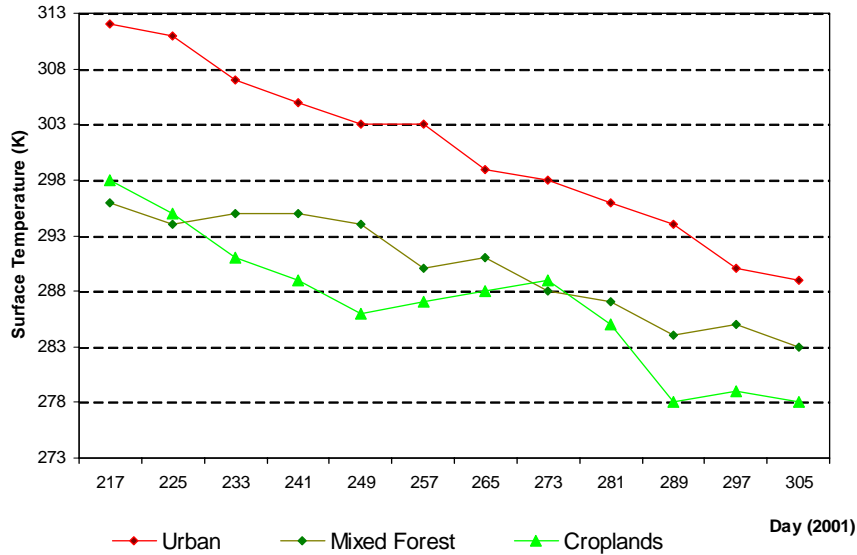
Tokyo & Kanto Area



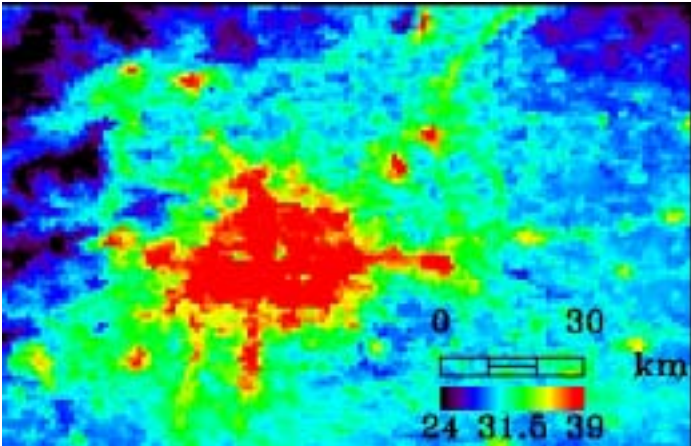
Tokyo & Kanto Area

LST images – July-Nov. 2001

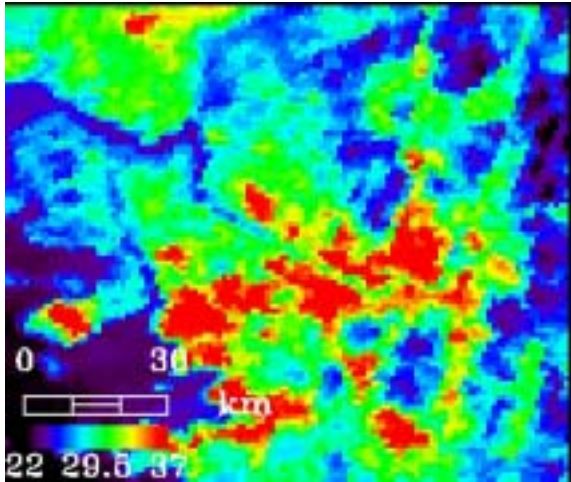
Time Series of Land Surface Temperature



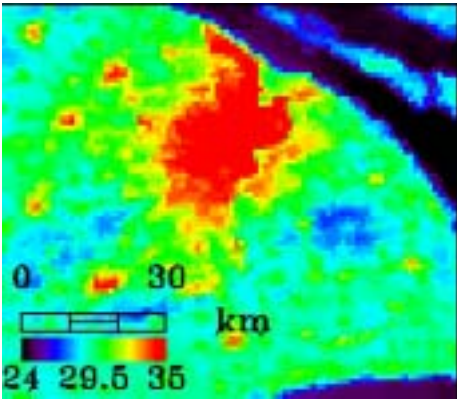
Heat Island in Asian Cities



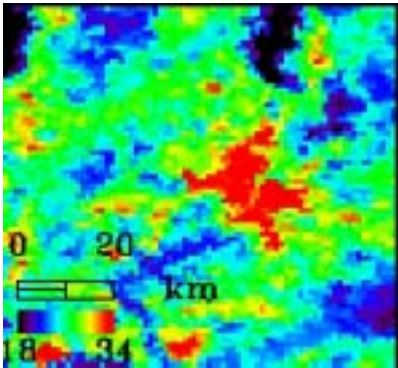
Beijing



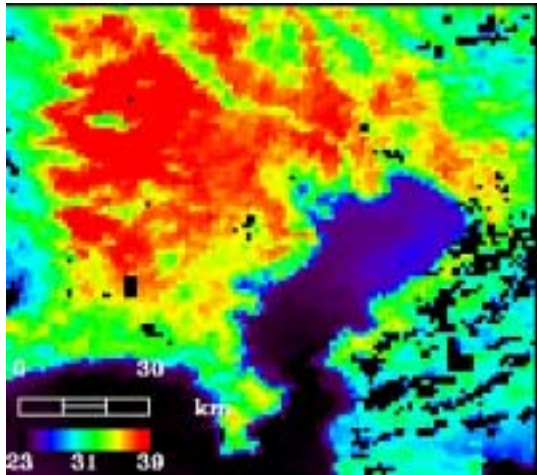
Seoul



Shanghai

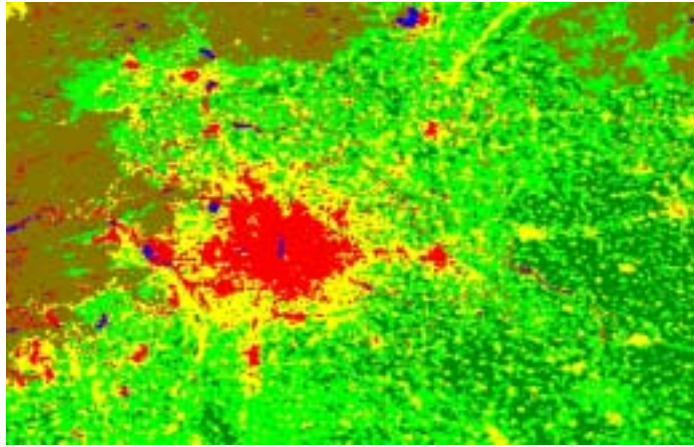


Pyongyang

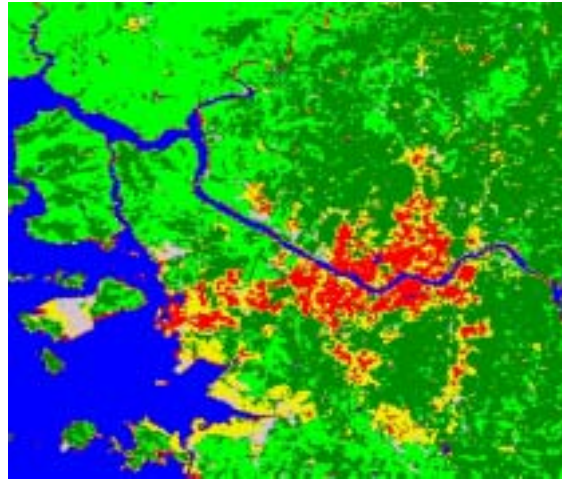


Tokyo

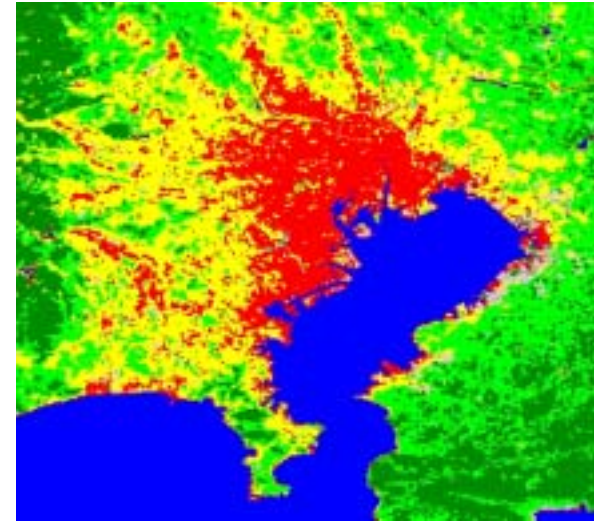
Land-cover distribution



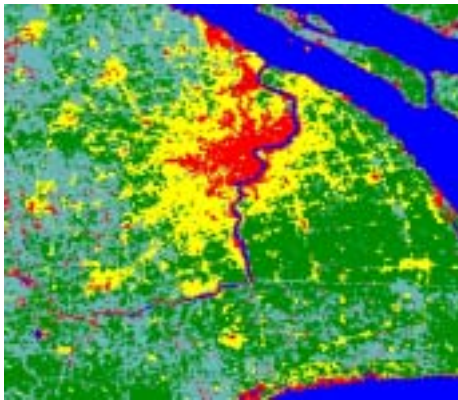
Beijing



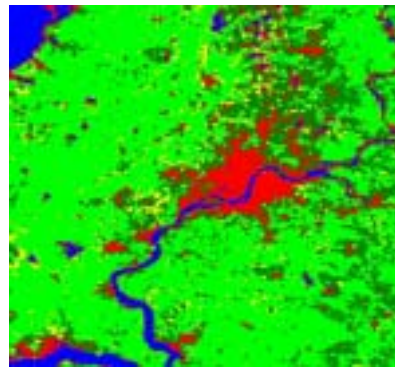
Seoul



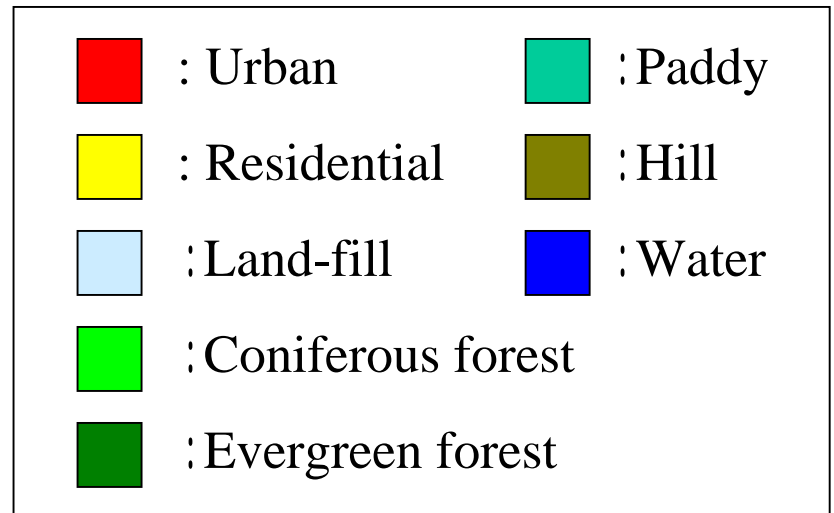
Tokyo

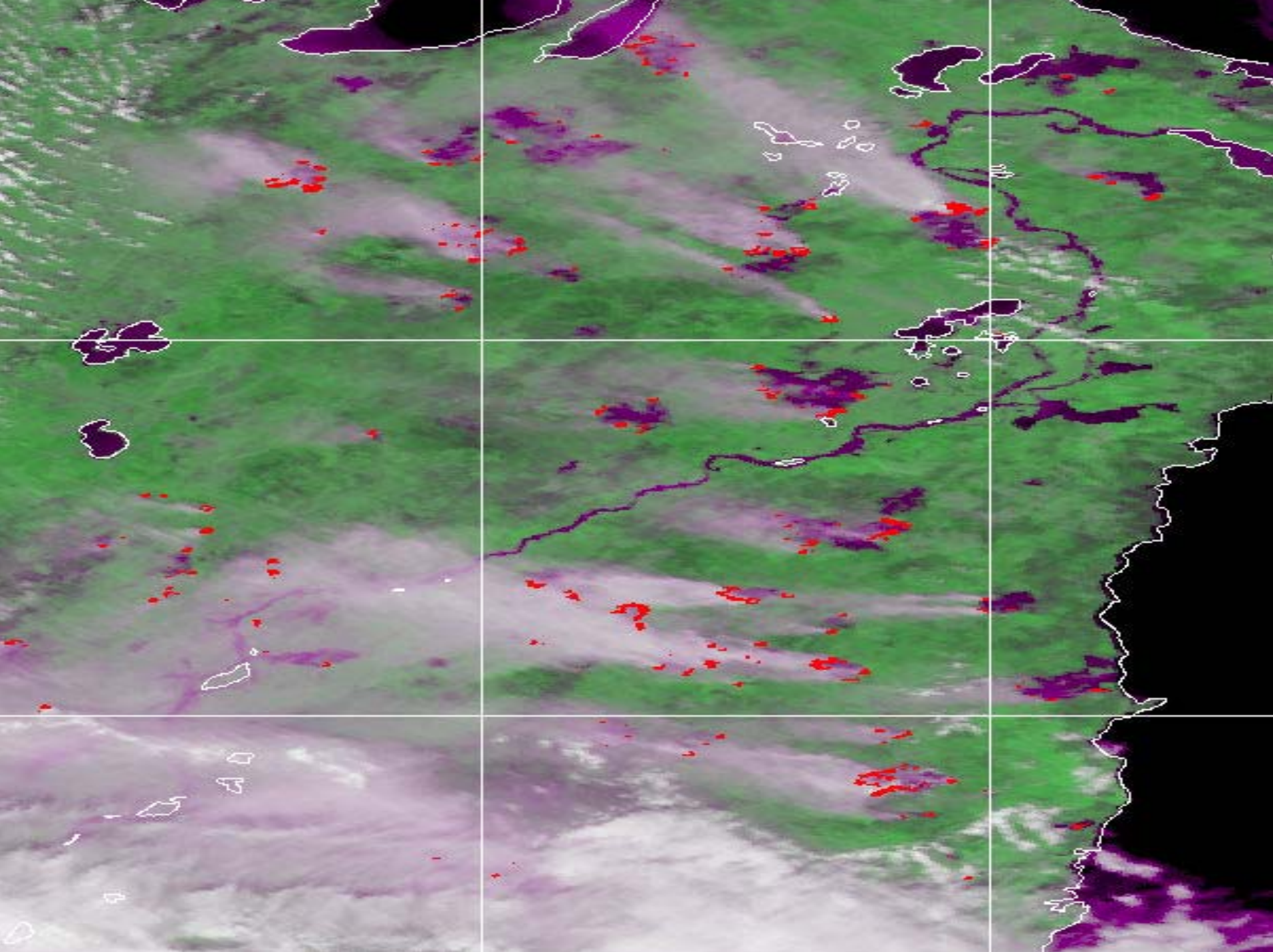


上海
Shanghai



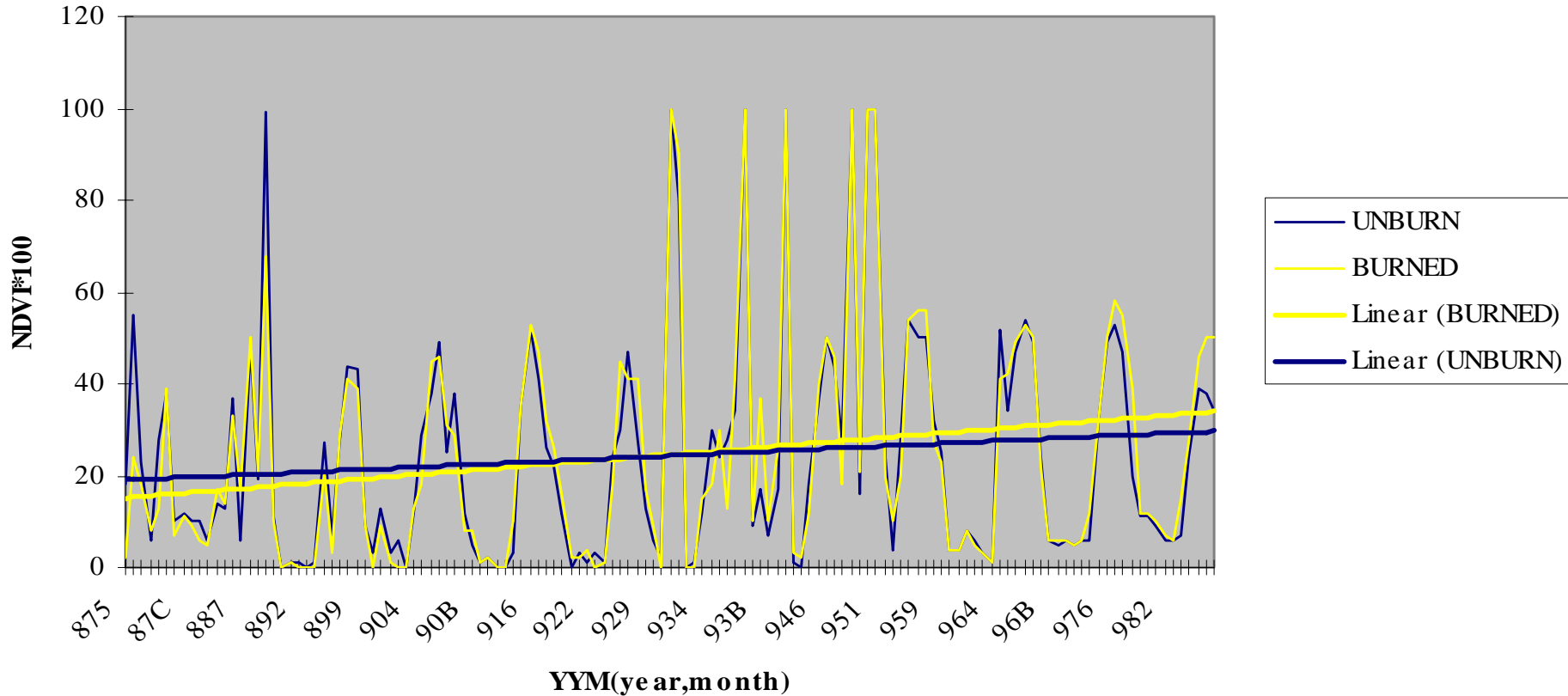
Pyongyang





Burned area recover monitoring - NDVI

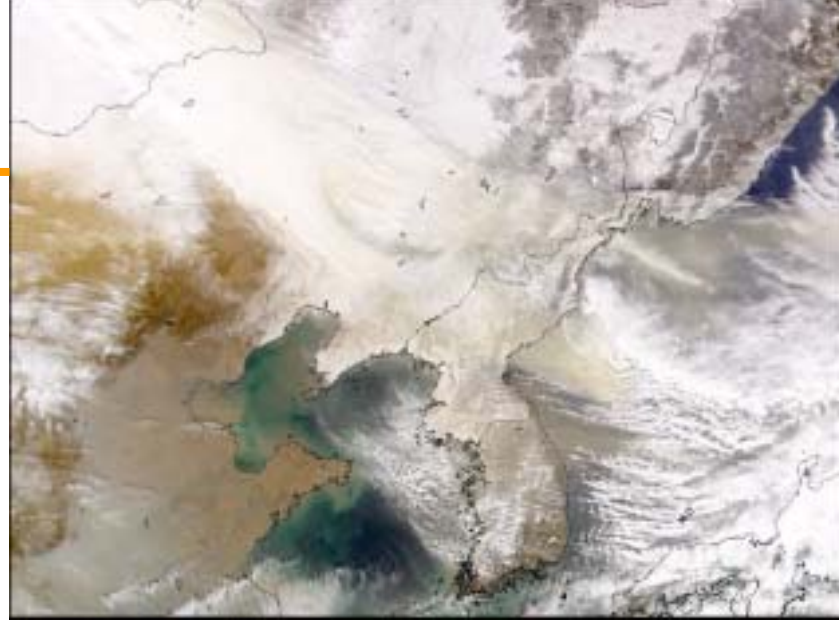
COMPARISON OF NDVI UNBURNED AND BURNED AREA



Asian MODIS DB network

Similar to the US MODIS DB network (GSFC, USF, UW, OSU)

- Data sharing between sites in the region for joint study of extreme weather events at continental scale – dust storms, typhoons, ...
- Generate selected agreed portions of data / products.
- Algorithm/products inter-comparisons.
- Compositing process to generate Asian mosaic (NDVI, LST/SST) in shortest time lag.



Dust storm (Jan 02, 2001)



Typhoon Pabuk (Oct 16, 2001)

