

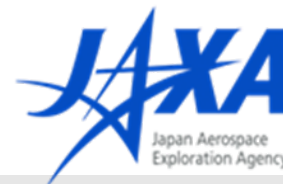


# **JAXA's Contribution to CEOP Dataset Production**

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**The 3rd Annual CEOP Meeting**  
**Melbourne, Australia**

# CEOP Satellite Dataset Overview



- JAXA has been producing satellite datasets for CEOP since 2003.
- Daichi (ALOS) and MODIS datasets were added in 2007 and 2008 respectively.

Satellite	Sensor	Parameter	Processing Center
Midori-II (ADEOS-II)	GLI	Cloud Optical Thickness, Aerosol radiance, Vegetation Index, Chlorophyll-a, Snow Grain Size, Cloud flag...etc.	JAXA
	AMSR	Brightness temperature, Sea temperature and wind speed, Water vapor, Soil moisture, Snow water ...etc.	
Aqua	AMSR-E	...	
TRMM	PR	Rain profile, Near surface rain, Averaged rain	NASA/GSFC
	TMI	Brightness temperature, Surface rain, Cloud ice/liquid water, Precipitation ice/water	
DMSP-13,14,15	SSM/I	Brightness temperature	NASA/GHRC
Daichi (ALOS)	PRISM	Radiance	JAXA
	AVNIR-2	Radiance	
	PALSAR	Amplitude	
Terra	MODIS	Aerosol , Water Vapor, Cloud, Ozone, Snow cover, Land Surface Temperature, Aerosol/ Water Vapor/ Clouds and Profiles, Atmospherically Corrected Surface Reflectance ...etc.	NASA/GSFC

# Dataset Description

## ■ Three Scales

- 250km rectangular covering each Reference Sites,
- Monsoon Regional
- Global Area

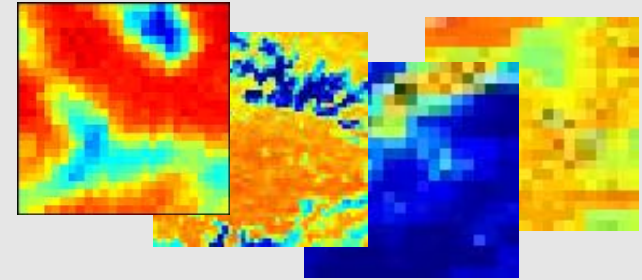
## ■ Product Levels

- **Level-1b:** Radiance product with full resolution at reference sites.
- **Level-2:** Geophysical product at the same resolution at reference sites and monsoon regions.
- **Level-3:** Statistical geophysical product in space and/or time at reference sites, monsoon regions and global. (example: Monthly mean rain rate at reference sites, etc.)

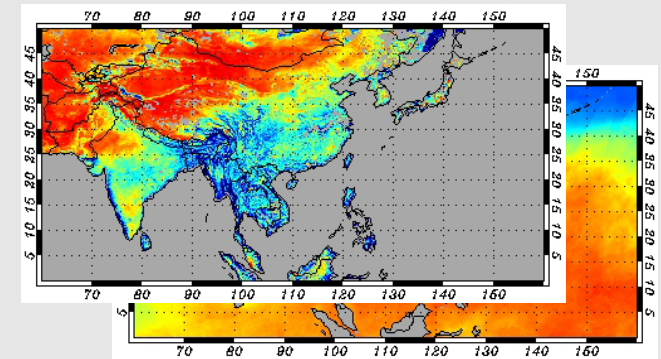
## ■ Metadata

- Consist of an image element and a metadata part element that is compliant with the ISO-19115 metadata standard.

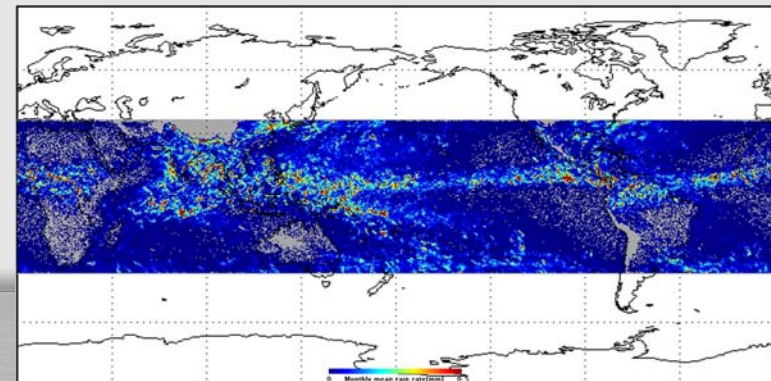
Reference Sites



Monsoon Regional



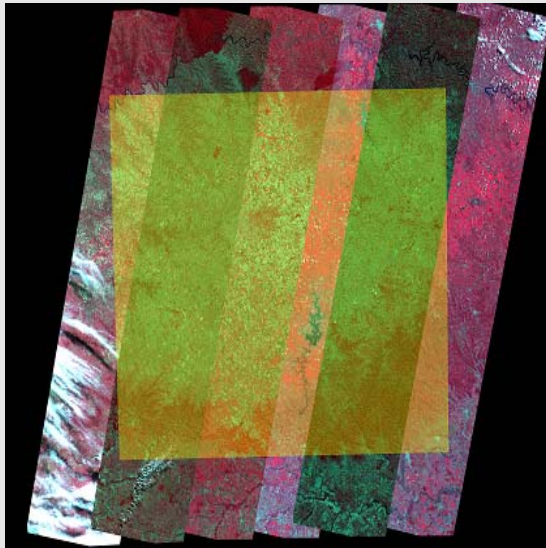
Global Area





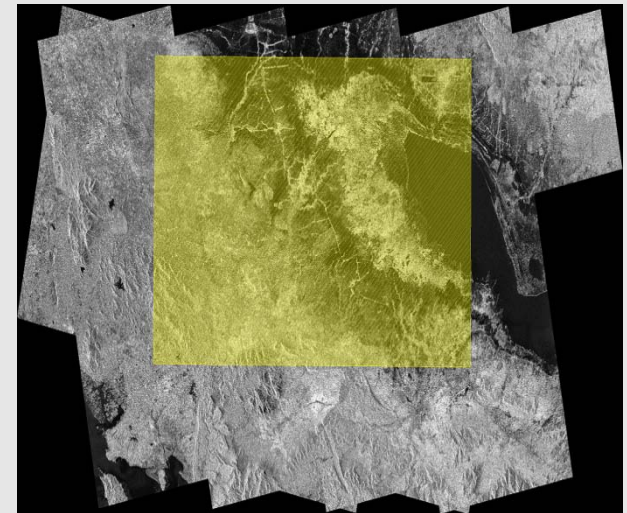
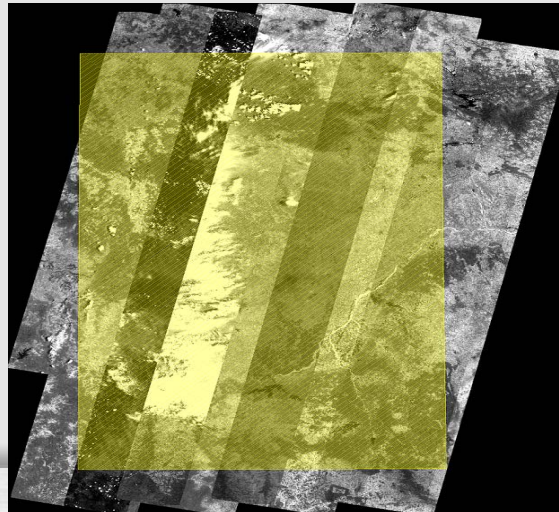
# Daichi (ALOS) Path-Mosaics

- Produced with Level 1 products of three sensors: PRISM, AVNIR-2 and PALSAR
- Associate with CEOP Reference Sites and AWCI River Basins
- Path-mosaiced instead of subsets because of the original small scene size and the large data volumes



**Cruz Alta, Brazil**  
AVNIR-2 R:G:B=4:3:2band  
6 paths of mosaic images

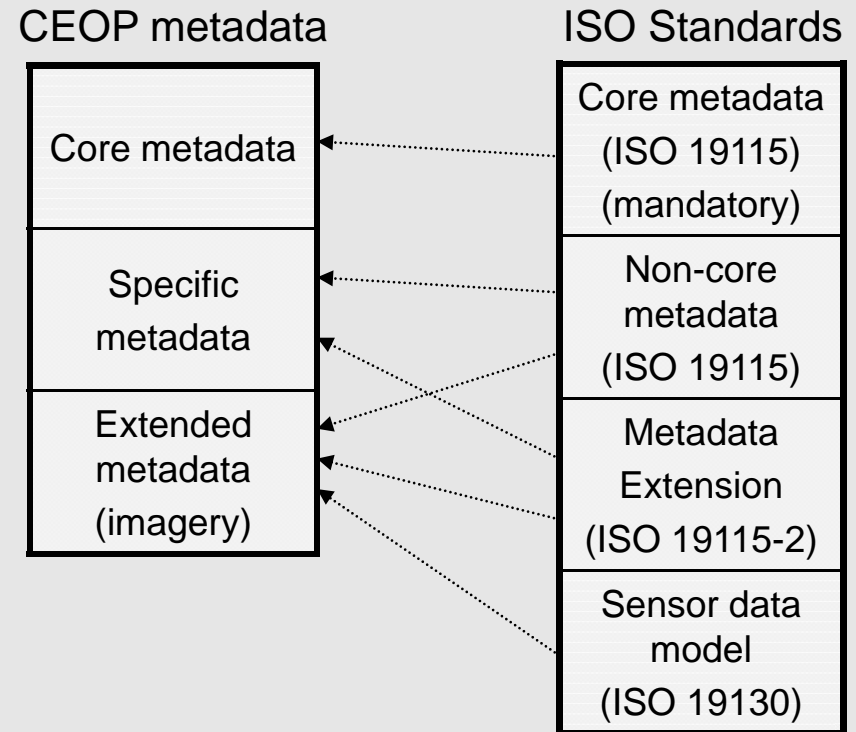
**Seonath-river, India**  
PRISM  
10 paths of Mosaic  
images



**Sangker, Cambodia**  
PALSAR FBD(HH)  
8 paths of mosaic images

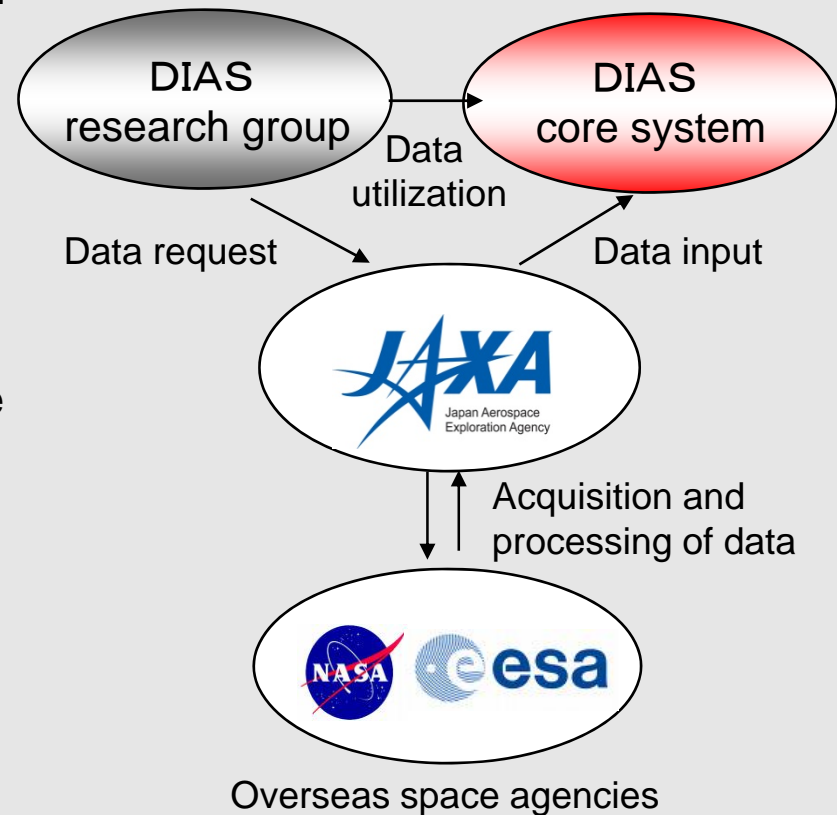
# Meta-data based on ISO Standards

- **Developed in 2003** when the project started based on ISO 19115(draft)
- **Naming convention** for data files
- Metadata files in **XML format**
- One metadata file corresponding to one data file
- Originally **extended tags** from ISO 19115
- Revision of the specification is under discussion:
  - **Complete conforming** to ISO 19115
  - **No extensions**
  - Applied to a new data-mining system

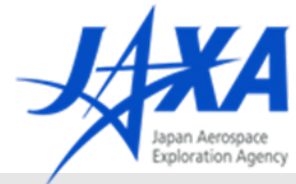


# International Cooperation

- Moderate Resolution Imaging Spectroradiometer (**MODIS**) and Atmospheric Infrared Sounder (**AIRS**) datasets were added in 2008.
- **NASA MODIS Team** produces subsets of MODIS data, while JAXA reformats and resamples the subsets, and prepares corresponding metadata.
- In 2008, **Terra/MODIS datasets of EOP-4** were produced with selected products in three scales as same as the other CEOP satellite datasets.
- **NASA AIRS Team** produces AIRS datasets for CEOP
- Both AIRS and MODIS datasets are archived in the **CEOP centralized database (DIAS core system)** located in the University of Tokyo, the same as the other CEOP datasets.



# Number of Processed Scenes



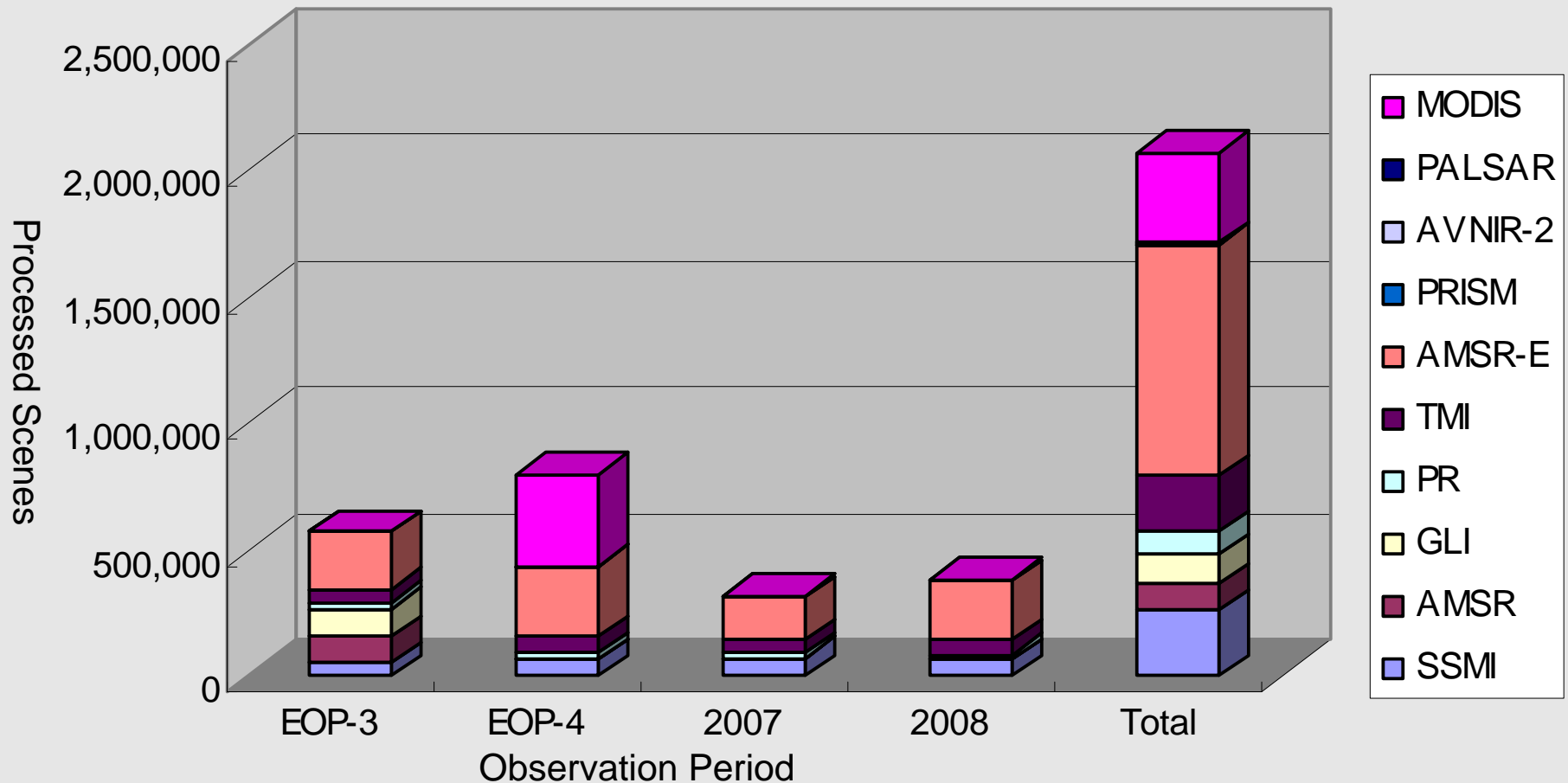
S/C	Sensor	EOP-3	EOP-4	2007	2008	Total
DMSP	SSMI	53,780	66,885	76,303	65,492	262,460
Midori-II (ADEOS-II)	AMSR	103,590	-	-	-	103,590
	GLI	114,550	-	-	-	114,550
TRMM	PR	22,291	27,851	18,685	23,478	92,305
	TMI	49,793	62,385	49,503	58,575	220,256
Aqua	AMSR-E	230,607	282,784	172,348	232,592	918,331
Daichi (ALOS)	PRISM	-	-	504	1410	1914
	AVNIR-2	-	-	276	644	920
	PALSAR	-	-	698	1,437	2135
Terra	MODIS	-	361,950	-	-	361,950

EOP-3: 2002/10/1 – 2003/9/30

EOP-4: 2003/10/1 – 2004/12/31

**Total** 2,078,411

# Number of Processed Scenes



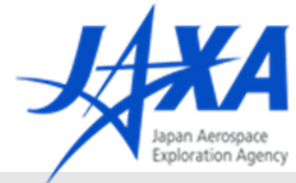
EOP-3: 2002/10/1 – 2003/9/30

EOP-4: 2003/10/1 – 2004/12/31

**Total 2,078,411**



# Dataset Production Plan JFY2009



- **Microwave sensors (TRMM/PR, TMI, Aqua/AMSR-E and DMSP/SSM-I)**
  - Continue the conventional CEOP satellite dataset production in the three scales with data **observed in 2009 (January 1 to December 31, 2009)**
- **Daichi (ALOS) sensors**
  - Produce **Path-Mosaics** at following **11 CEOP Reference Sites** and **4 AWCI River Basins** selected as target areas of JFY2009
    - *Eastern Siberian Taiga*
    - *Downstream of the Yellow River*
    - *Tsukuba*
    - *Lanzhou*
    - *Manaus*
    - *Caxiuana*
    - *Tumbarumba (tower)*
    - *Cruz Alta*
    - *Niamey*
    - *Ouémé*
    - *Gourma*
    - *Cambodia Sangker*
    - *India Seonath-river*
    - *Myanmar Shwegyin*
    - *Uzbekistan Chirchik-Okhangaran*
- **MODIS on Terra and Aqua**
  - Produce **Aqua/MODIS datasets of EOP-4** corresponding to the Terra/MODIS datasets produced in JFY2008