



Overview of ADEOS-II Program

13-14 December, 2000

Workshop on ADEOS-II Data Utilization in Asia and Pacific Region
Bangkok, Thailand

Yasuyuki ITO

Earth Observation Research Center



Global Environment Changes

- Climatic warming
- Rise of the sea level
- Decrease of forests
- Desertification
- Depletion of the ozone layer
- Acid rain
- Decreased diversification of species



Global Warming

- Records of Increasing GreenHouse Gases (GHG)
- Predicted Further Increase of GreenHouse Gases
- Long-term Global Warming predicted by Climate Models

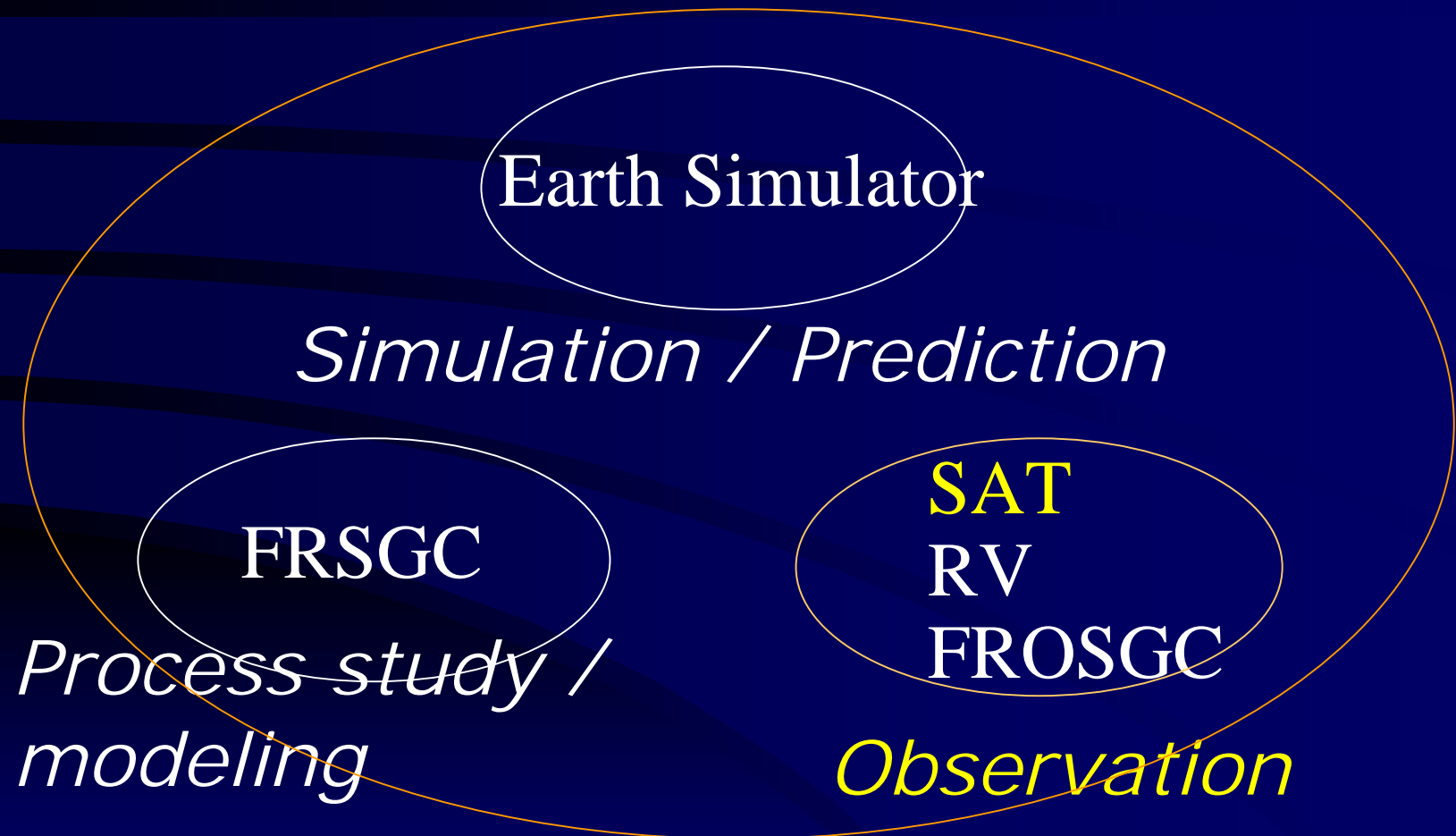


United Nation's Binding Activities

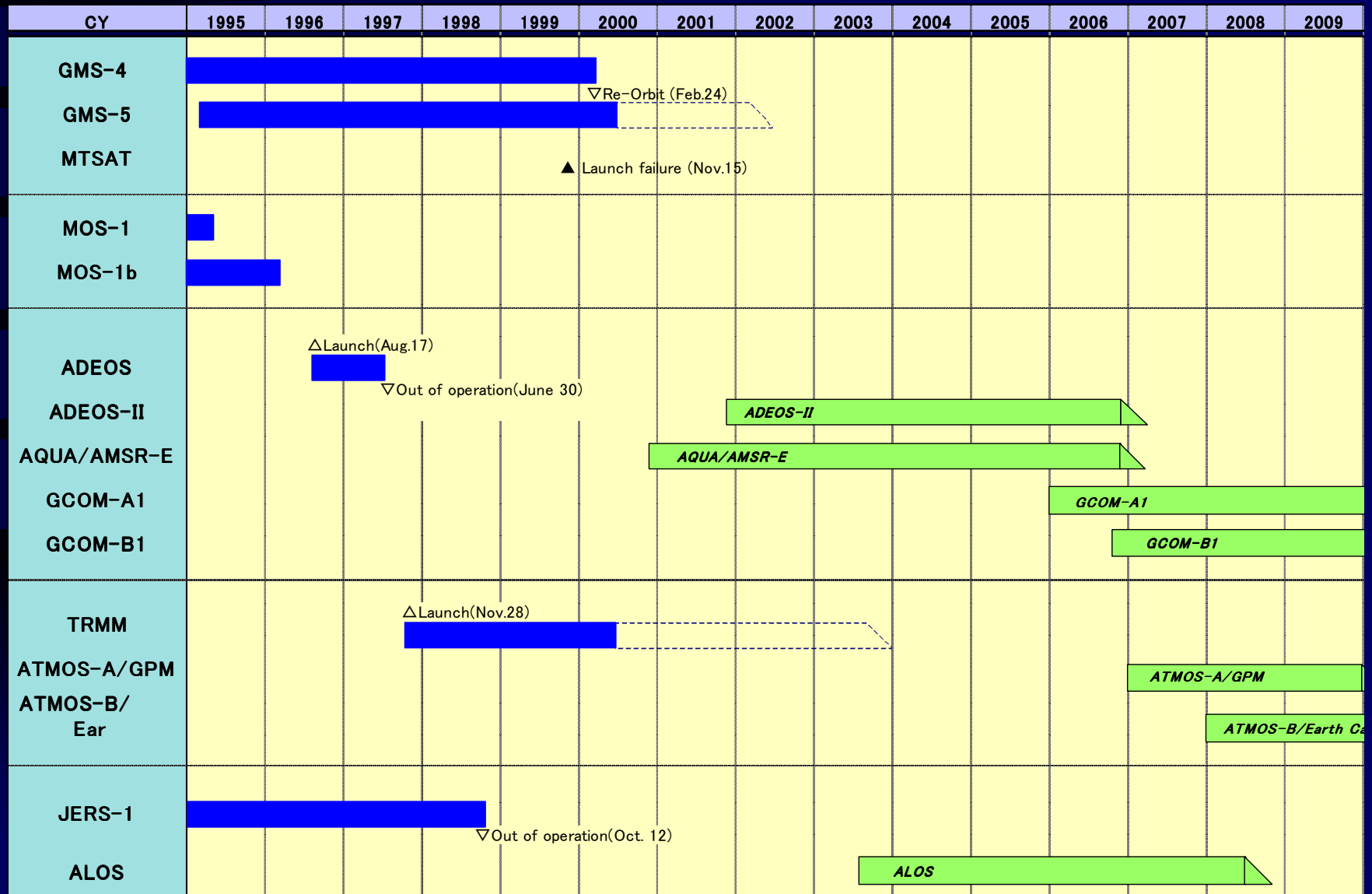
- Montreal Protocol, 1987
 - on Substances that Deplete the Ozone Layer
- Kyoto Protocol, 1997
 - on Emission of GreenHouse Gases (CO₂, CH₄, N₂O, HFC, PFC, SF₆)



Key Elements of Global Change Study



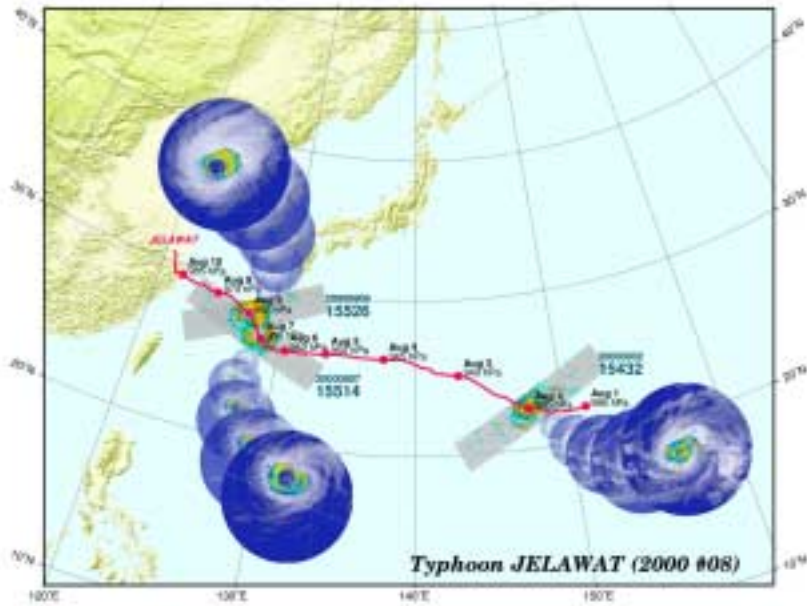
Earth Observation Satellite Programs of Japan



Typhoon #8, 2000

(@ EORC Web / TRMM)

TRMM/PR Observation for Storm Event
Typhoon JELAWAT (2000 #08)



PR2A25 Near Surface Rain

- 0.1 - 1 mm/hr
- 1 - 2 mm/hr
- 2 - 4 mm/hr
- 4 - 8 mm/hr
- 8 - 16 mm/hr
- >= 16 mm/hr

PR Data Info.

- PR Observation Path
- 15526 Satellite, Orbit Number

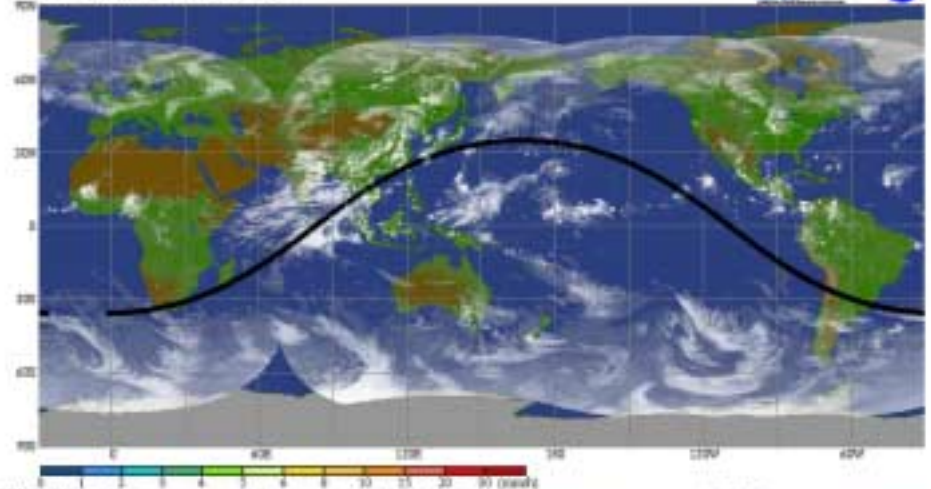
Typhoon Path

- Location and Pressure at 12Z (ZUL)

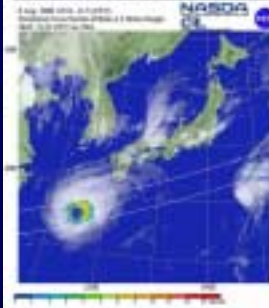
GMT Aug 18 18:02:04 2000: imed@fsl.noaa.gov

TRMM PR 2A25 Rain

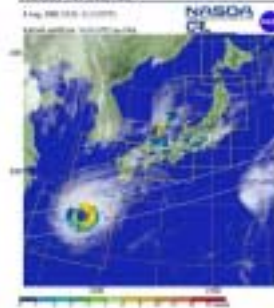
8 Aug. 2000 10:20-11:53 (UTC)
 Earthward Cross Section of Rain at 2.5km Height



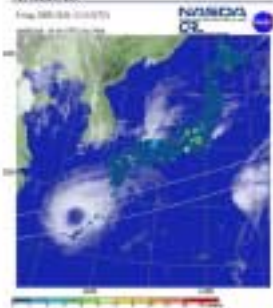
TRMM PR 2A25 Rain



Radar AMeDAS

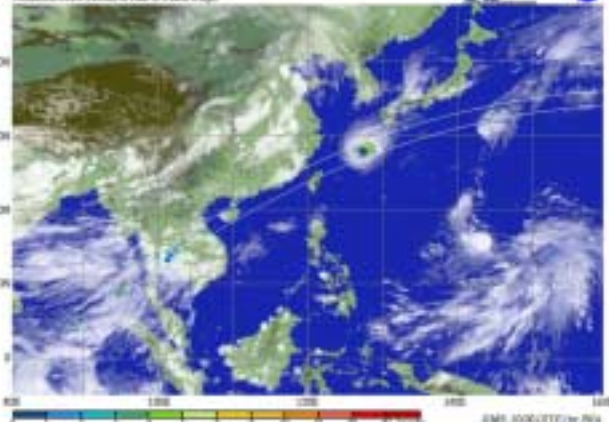


AMeDAS

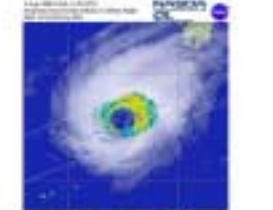


TRMM PR 2A25 Rain

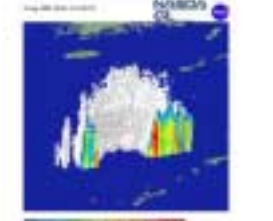
8 Aug. 2000 03:43, 11:18 (UTC)
 Earthward Cross Section of Rain at 2.5km Height



TRMM PR 2A25 Rain



TRMM PR 2A25 Rain

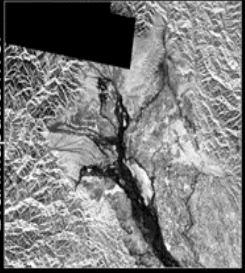


GMT 2000/08/18 03:43

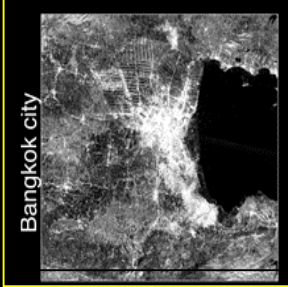
JERS-1 SAR Global Rain Forest Mapping Project Southeast Asia



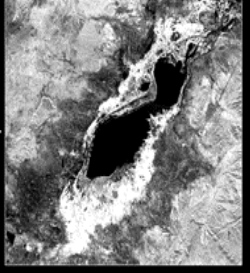
Brahmaputra river



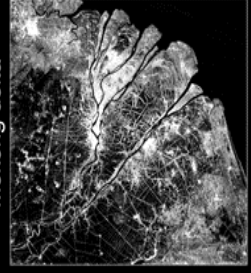
Bangkok city



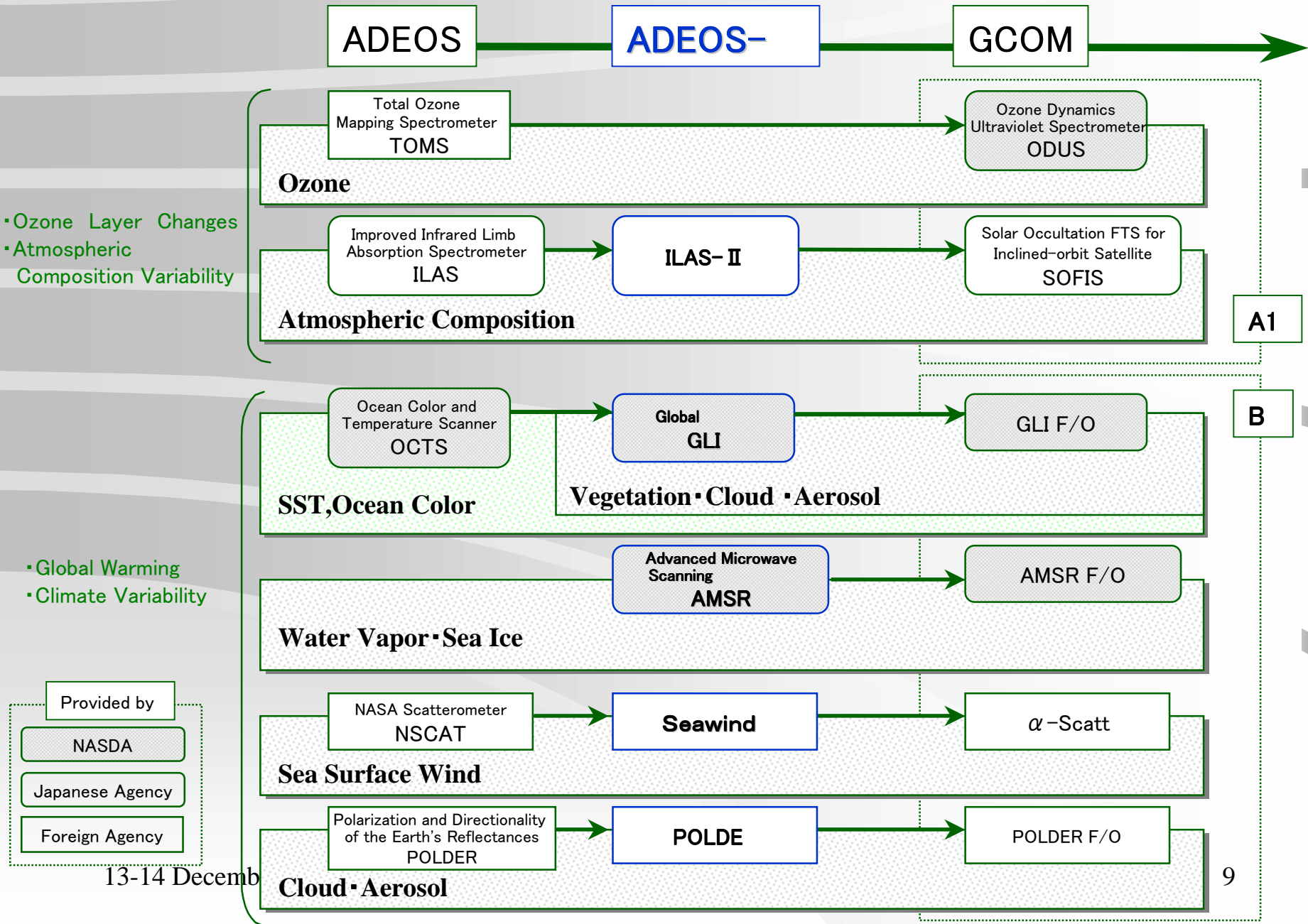
Tonle Sap lake



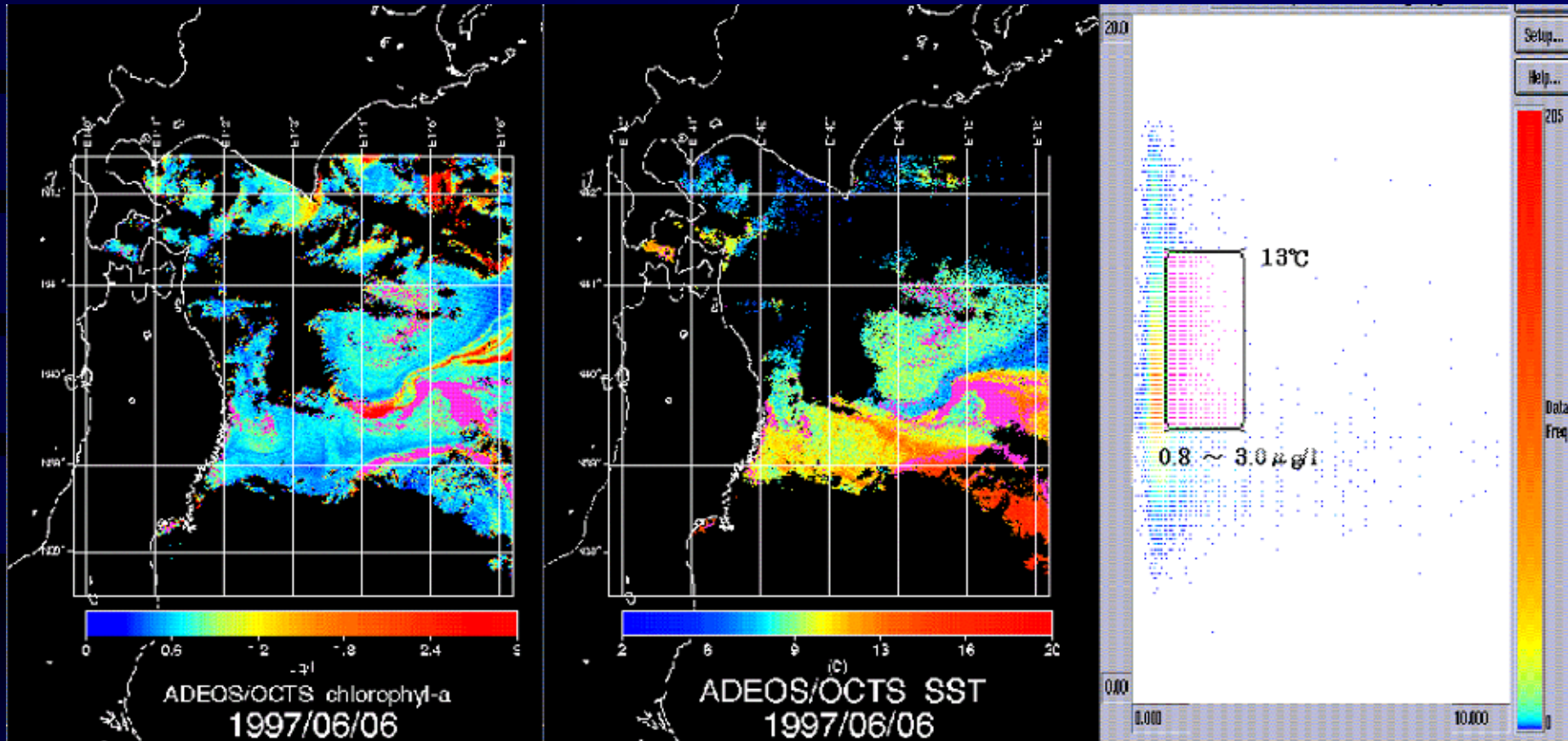
Mekong delta



Continuity of GCOM Physical Parameters and Instruments

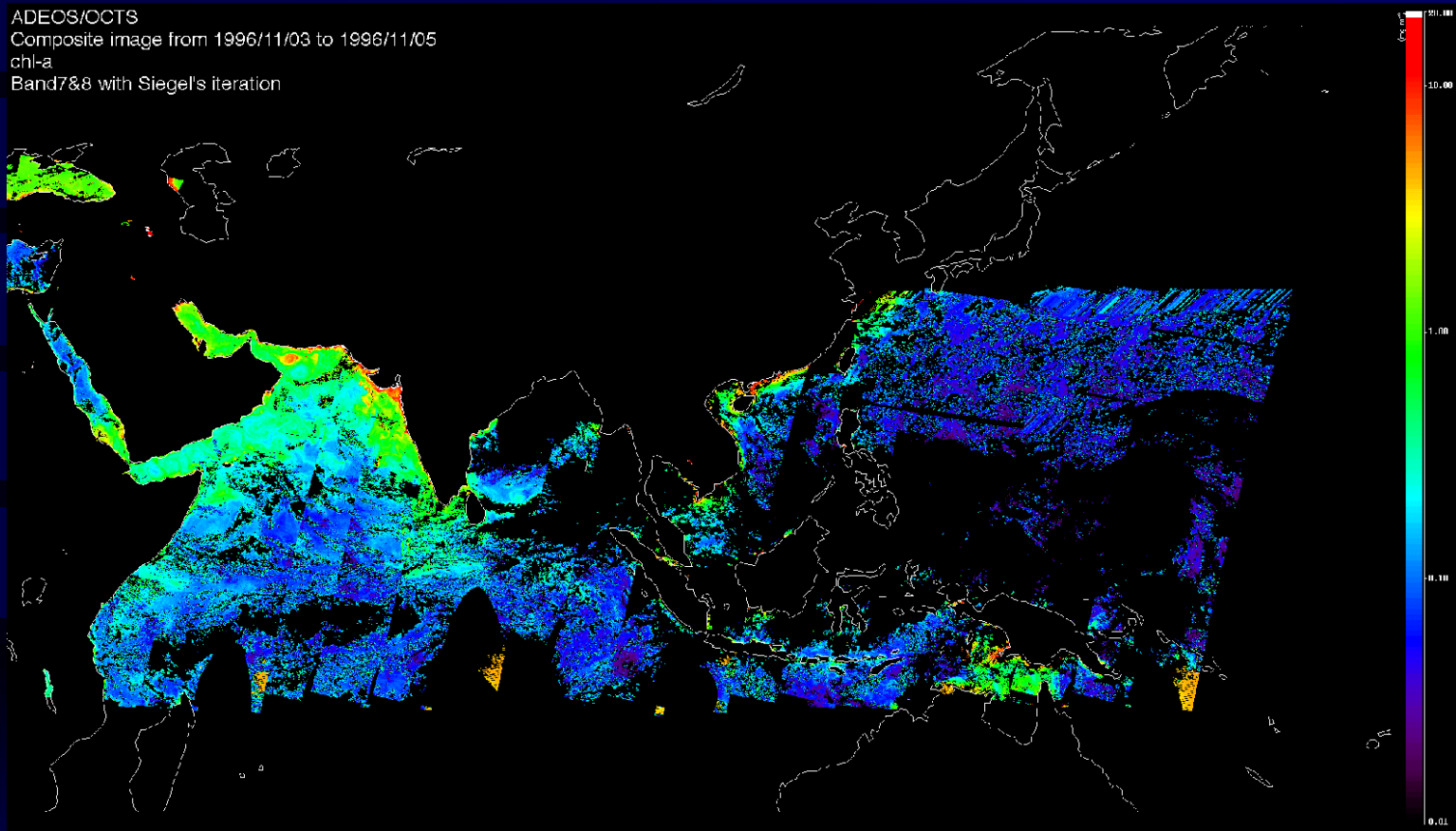


Achievements of ADEOS



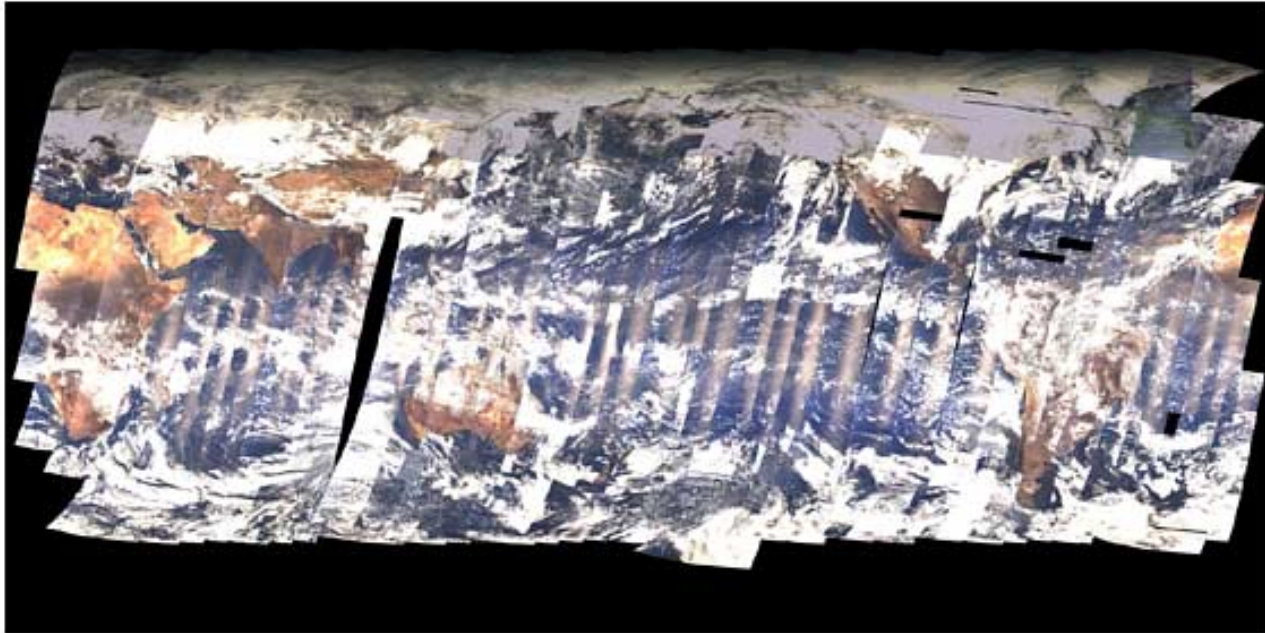
Chlorophyll-a of OCTS, Sea Surface Temperature of OCTS,
and Statistics of Sardine fishery area.

Achievements of ADEOS



Chlorophyll-a Map of Asian LAC by OCTS Nov.1996

Achievements of ADEOS



ADEOS OCTS (B,G,R=Ch.2,Ch.4,Ch.5) 14-16 Feb. 1997.

Global Vegetation Map by OCTS (Feb 14-16, 1997)



ADEOS-II Flight Model under test at Tsukuba Space Center

13-14 December, 2000

ADEOS-II Workshop @ Bangkok

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ADEOS-II Program Status

● **Satellite Development**

- ◆ ADEOS-II System PFT completion by December 2000.
- ◆ ADEOS-II will be stored by the end of March 2001. Functional tests and additional tests on sensors will be conducted during the period.
- ◆ The ADEOS-II PQR will be held by the end of March 2001.

● **Ground Segment Development**

- ◆ Level 1 data processing system is under Mission Simulation Test #1.
- ◆ Mission Simulation Test #2 will be conducted from April to July 2001.
- ◆ Level 2&3 data processing system is in the manufacture and test phase.

● **Analysis & Research**

- ◆ Level 2&3 algorithm for AMSR and GLI is almost integrated in the processing system.

● **Data Acquisition Operation**

- ◆ Preparation for ADEOS-II data acquisition operation will start in July 2001.

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 Assistant Executive Director
TRMM /ADEOS-II /ALOS Program Manager
T. Inada

Quality Assurance Office

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 Manager **Y. Kamiya**

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- Strategy, Planning and Program Management
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ALOS Deputy Program Manager
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- GCOM Program
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C. Ishida

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Y. Tange *
- Future Mission (Microwave Sensor)
Y. Hisada
- Ground Systems (ADEOS-II, EOS-PM1)
Y. Ishido
- Ground Systems (ALOS)
M. Tsuchiya

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T. Abumi
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Y. Toba
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- Science Project Promotion
Y. Ito
- Senior Scientists
T. Tanaka
T. Igarashi
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Joint Project of NASDA & JAERI & JAMSTEC

Frontier Research System for Global Change
 Director **T. Matsuno**

Joint Project of NASDA & JAMSTEC

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 Dept. Proj. Manager **Y. Nakamura**

ALOS Project Team
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 Dept. Proj. Manager **K. Tomioka**

EOS-PM Project Team
 Proj. Manager **T. Kawanishi**

Senior Engineer
T. Kawanishi *
Y. Tange

Senior Engineer
T. Hamazaki

* : concurrent post

JAERI: Japan Atomic Energy Research Institute
 JAMSTEC: Japan Marine Science and Technology Center

Office of Earth Observation Systems



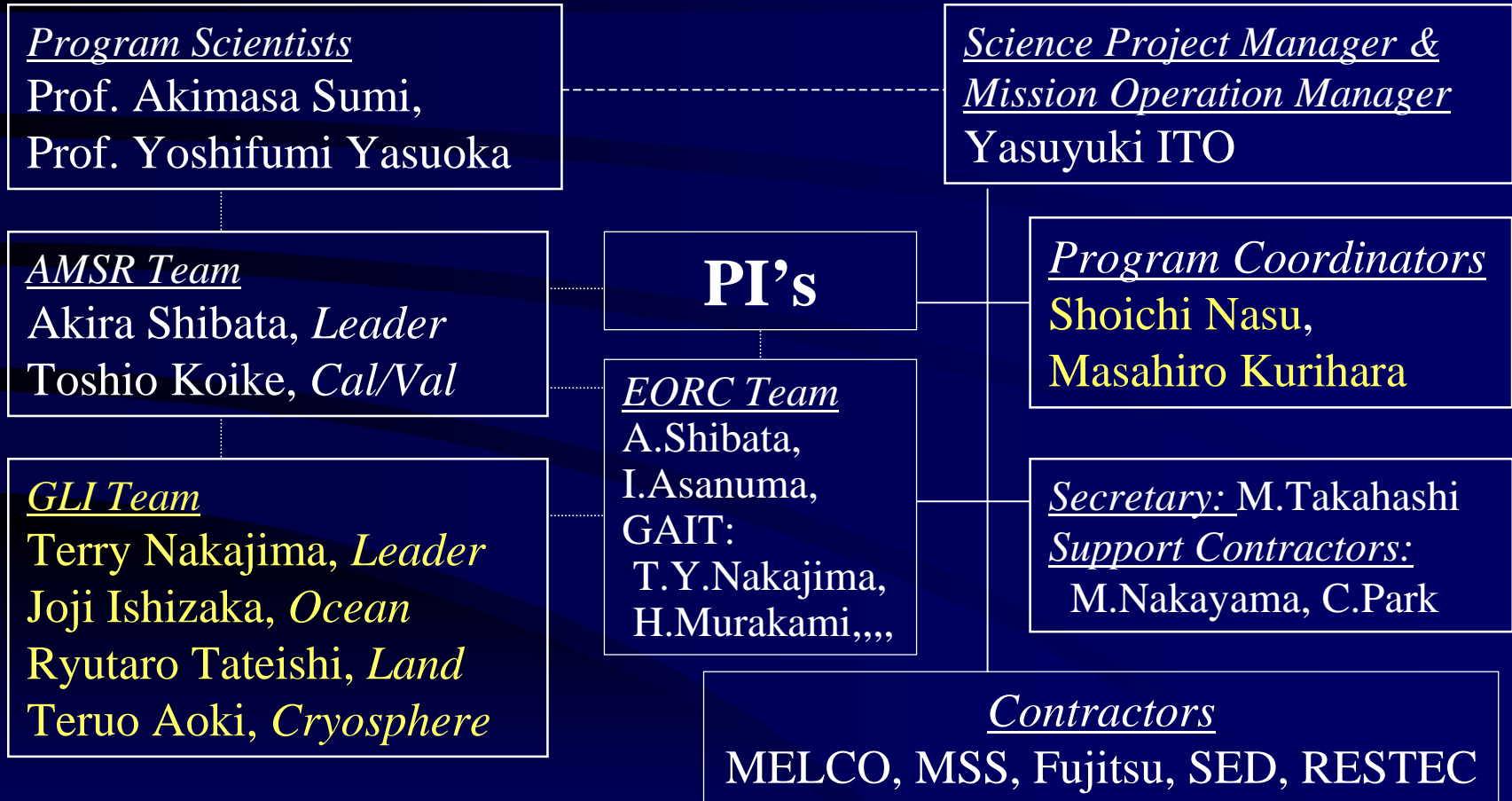
Science Project Scope of Work

ADEOS-II Science Project

- Higher-order Algorithm Development
- Calibration & Validation
- Processing System Development
- Science Team



ADEOS-II Science Project Organization





ADEOS-II Geophysical Products

AMSR < same for AQUA/AMSR-E >

- Water Vapor
- Cloud Water
- Precipitation
- Sea Surface Wind Speed
- Sea Surface Temperature
- Sea Ice
- Snow Depth
- Soil Moisture (Research Product)



ADEOS-II Geophysical Products

GLI <overview>

- Aerosol parameters
- Cloud parameters
- Chlorophyll-a
- Colored Dissolved Organic Matter
- Suspended Solid weight
- Sea Surface Temperature
- Vegetation Index
- Snow Grain Size & Impurities



ADEOS-II Geophysical Products

SeaWinds

- Sea Surface Wind Vector

POLDER

- Cloud and Aerosols parameters, etc.

ILAS-II

- Ozone, HNO_3 , etc.

(ARGOS-DCS)

Science Projects at EORC

- JERS-1 : data 92-98
- ADEOS : data 96-97
- TRMM : data 98-
- ***AQUA/AMSR-E : Launch Jul. 2001***
- ***ADEOS-II : Launch Feb. 2002***
- ALOS : Launch 2003
- *GCOM : data 2002 - 2017 (TBD)*



Calibration & Validation

- EORC is responsible for (Cal)/Val.
- Basic Cal/Val plan completed.
- Cal/Val implementation plan:
 - JFY2000 documentation completed.
 - JFY2001 documentation in progress.
- Needs cooperation worldwide.



Summary

- NASDA Earth Observation programs contribute to Global Change Issue.
- ADEOS-II is an important next step, following ADEOS, towards GCOM.
- Launch planned in Feb.2002, data public availability in 2003.
- EORC is focal point for Algorithm, Cal/Val and science applications.