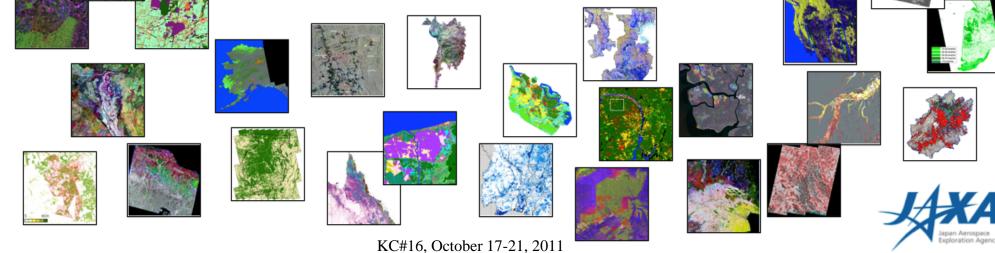


# ALOS Kyoto & Carbon Initiative Brief intro for new members

Ake Rosenqvist K&C Science Coordinator



# Outline

- 1. Heritage and objectives
- 2. Project organization
- 3. Data- and information requirements
- 4. Misc project information



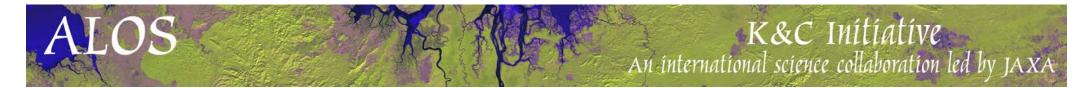
# Heritage and objectives

The ALOS Kyoto & Carbon Initiative is an international collaborative project forming the continuation and extension of the JERS-1 SAR GRFM/GBFM project into the era of ALOS and ALOS-2.

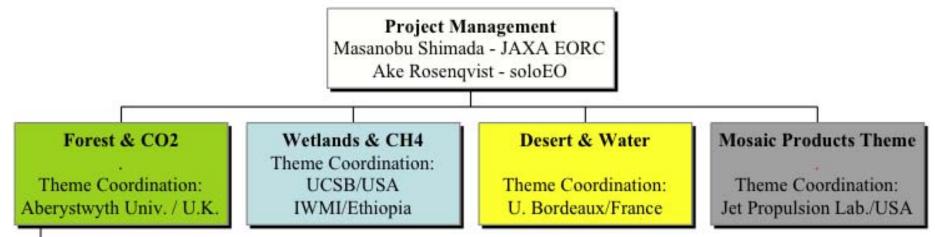
Aims to support information needs posed by the "3 C's":

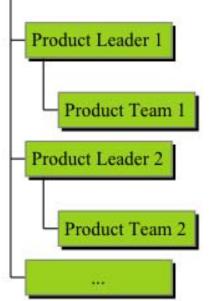
- The terrestrial Carbon cycle science community (CO2 & CH4 sources and sinks);
- Multinational Environmental Conventions:
  - UNFCCC Kyoto Protocol and REDD+ (Forest and Land Cover Change);
  - Ramsar Convention (wetland characteristics and disturbances);
- Environmental Conservation





## Phase 1 and Phase 2 - K&C Project organization





### <u>K&C Science Team:</u>

JAXA EORC (Japan); JRC (E.U.); JPL (USA); INPE (Brazil); IBAMA (Brazil); U-Wageningen (The Netherlands); DLR (Germany); Int'l Wetlands Management Inst (Ethiopia); CESBIO (France); FSU-Jena (Germany); U-Sheffield (U.K.); SLU (Sweden); Gamma RS (Switzerland); U-Aberystwyth (U.K.); UCSB (USA); WWF (Indonesia); U-Victoria (Canada); UNSW (Australia); U-Bordeaux (France); AGS (USA); sarmap (Switzerland); U-Mass (USA); ERISS (Australia); soloEO (Sweden)

Science Team - 22 science groups from 14 countries

# ALOS An international science collaboration led by JAXA

# Project phases

### Phase 0 – K&C Science Advisory Panel – 2001-2005

- Scientific advise to JAXA during ALOS mission development
- Development of the ALOS systematic acquisition strategy ("BOS")\*
- Pre-launch research: Development of algorithms and methods using archived JERS-1 SAR;

### Phase 1 & 2 – Regional "prototype" demonstration – 2006-2010

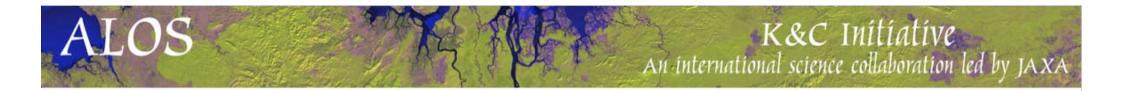
• Application demonstrations over large geographical regions - regional/semi-continental scale

### <u>Phase 3 – K&C in the PPP era (2011 – 2014)</u>

New focus areas:

- JAXA EORC global forest/non-forest map (validation and improvement)
- Development of methodology guidelines for forest/wetlands mapping by SAR
- K&C Mangrove Watch global mangrove change mapping
- Ramsar Wetlands Convention (JAXA-Ramsar Sec MoU signed Oct.2010)

<sup>\*</sup> PALSAR "Basic Observation Scenario" implemented by JAXA from launch to assure continental-scale, repetitive & spatio-temporally consistent PALSAR data acquisitions over all land areas on the globe.



# Project information resources (public access)



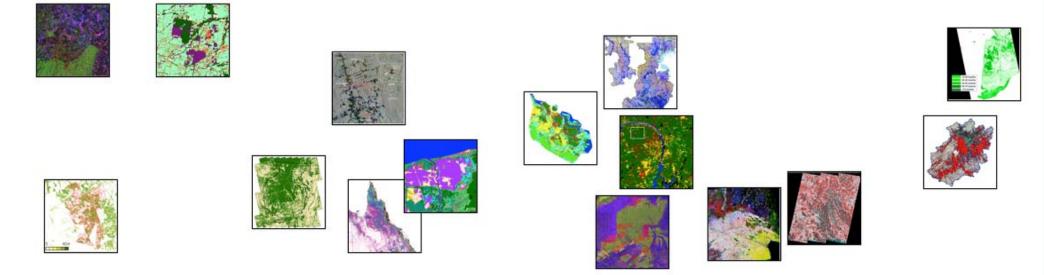




Image Gallery Observed images. research and application examples using PRISM, AVNIR-2 and PALSAR.

#### Dataset

- K&C Mosaic Home
- PALSAR 10m Mosaic Global Forest /
- Non-forest map IPY Dataset
- High Resolution Land-Use and
- Land-Cover Map Glacial Lake Inventory of Bhutan

#### Science Program

The research development targets for ALOS data utilization and its algorithm development for data products are described.

Calibration and Validation

Accuracy evaluation

Kyoto & Carbon Initiative
---------------------------

#### > Overview > 15<sup>th</sup> Science Team meeting

- > 14<sup>th</sup> Science Team meeting
- > 13<sup>th</sup> Science Team meeting
- > 12<sup>th</sup> Science Team meeting
- > 11<sup>th</sup> Science Team meeting (Phase 1 Final)
- > 10<sup>th</sup> Science Team meeting
- > 9<sup>th</sup> Science Team meeting
- > 8<sup>th</sup> Science Team sub-meeting
- > 8<sup>th</sup> Science Team meeting
- > 7<sup>th</sup> Science Team meeting
- > 6<sup>th</sup> Advisory Panel / Science Team meeting > 5<sup>th</sup> Science Advisory Panel Meeting
- > 4<sup>th</sup> Science Advisory Panel Meeting
- > IGARSS'03 Session
- > 3<sup>th</sup> Science Advisory Panel Meeting
- > 2<sup>th</sup> Science Advisory Panel Meeting
- > 1<sup>th</sup> Science Advisory Panel Meeting

#### Overview

- ... Science Plan (Ver.3.1, March 2008) (pdf file / 11,249KB)
- .. Overview
- .. Newsletters
- .. Scientific Advisory Panel members
- .. The ALOS Systematic Observation Strategy
- .. Scientific reports for K&C Phase 1

# JAXA EORC K&C Homepage

K&C Initiative

- K&C background information
- Agendas and presentation material available from all previous K&C Science Team meetings (KC#1 – KC#15)
- PALSAR systematic observation strategy (BOS)

http://www.eorc.jaxa.jp/ALOS/ en/kyoto/kyoto\_index.htm

# ALOS



KML file is also available for browsing the mosaic image by using Google Earth or NASA World Wind.

#### PALSAR 50m Orthorectified Mosaic Product

FBD 34.3 HH / HV<sup>\*2</sup>

This product covers over Asia and Oceania regions by mosaicing PALSAR data which is resampled into 50m<sup>\*1</sup> from original data. The product will be made once a year. Following observation mode is used for the product.



\*1. Mosaic images are projected into geographical latitude and longitude coordinates. So the spatial resolution of 50m is corresponded to 1.6170 sec.
\*2. HH and HV polarization data are kept in BSQ format. Color composition of the image data is R=HH, G=HV, B=HH/HV and enhanced.

• kml file (All area) download (kml file / 26KB)

#### PALSAR 500m Browse Mosaic Product

This product covers all over the world by mosaicing PALSAR data which is resampled into 500m from original data. The product will be made every cycle. Following observation modes are used to generate products.



FBS 34.3 HH FBD 34.3 HH / HV WB1 5beam HH WB2 5beam HH

# JAXA EORC K&C Mosaic Homepage

K&C Initiative

An international science collaboration led by JAXA

### K&C 50 m and 500 m resolution mosaic products online

- 50 m FBD and FBS mosaics
- 500 m browse mosaics (each
  - 46-day cycle)
    - FBD/FBS
    - ScanSAR

http://www.eorc.jaxa.jp/ALOS/e n/kc\_mosaic/kc\_mosaic.htm



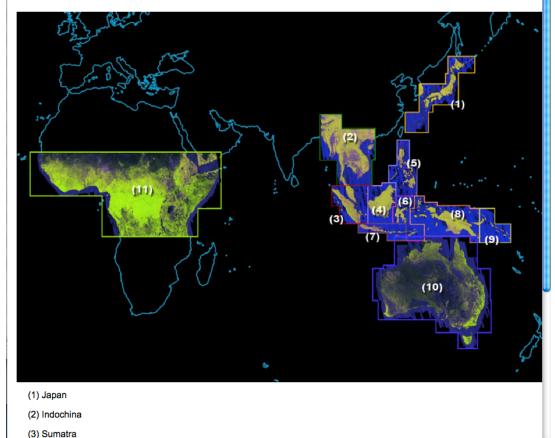
(4) Borneo/Kalimantan

An international science collaboration led by JAXA



K&C Mosaic Homepage - PALSAR 50m Orthorectified Mosaic Product

Please click the area (area in which it is painted) which jamp to downloadpage.



JAXA EORC K&C Mosaic Homepage

K&C 50 m orthorectified and 500 m resolution browse mosaic products online

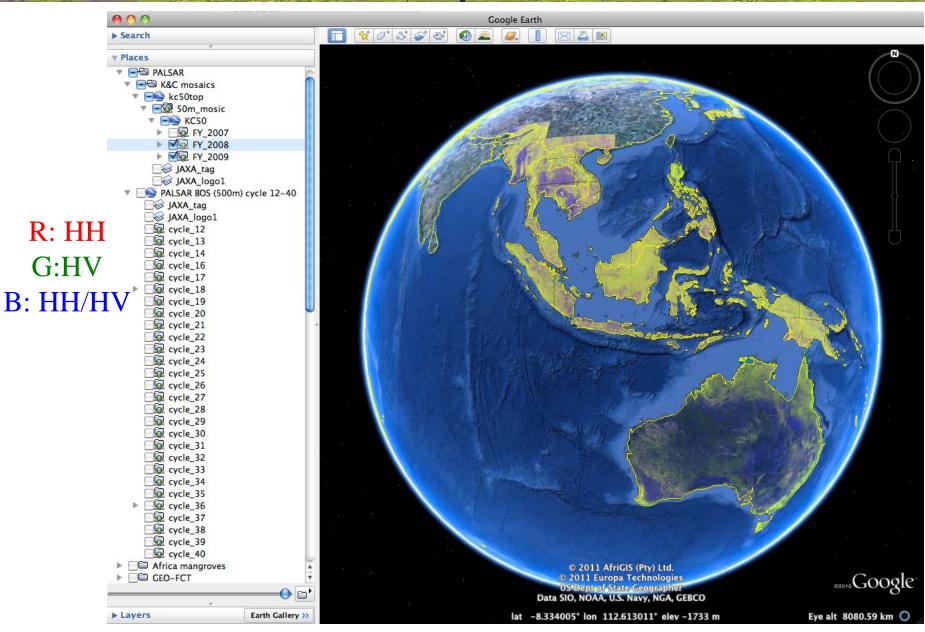
• 16 bit products

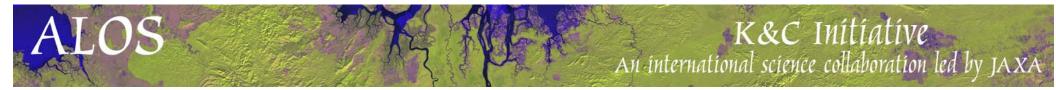
• kml files for Google Earth

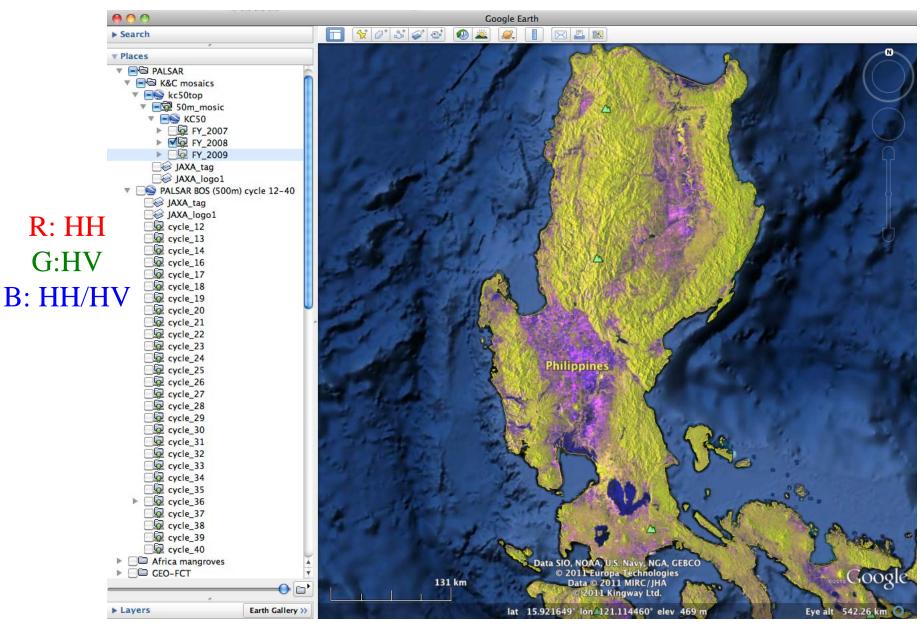
• To be updated (currently only South-East Asia and Central Africa online)

http://www.eorc.jaxa.jp/ALOS/e n/kc\_mosaic/kc\_mosaic.htm

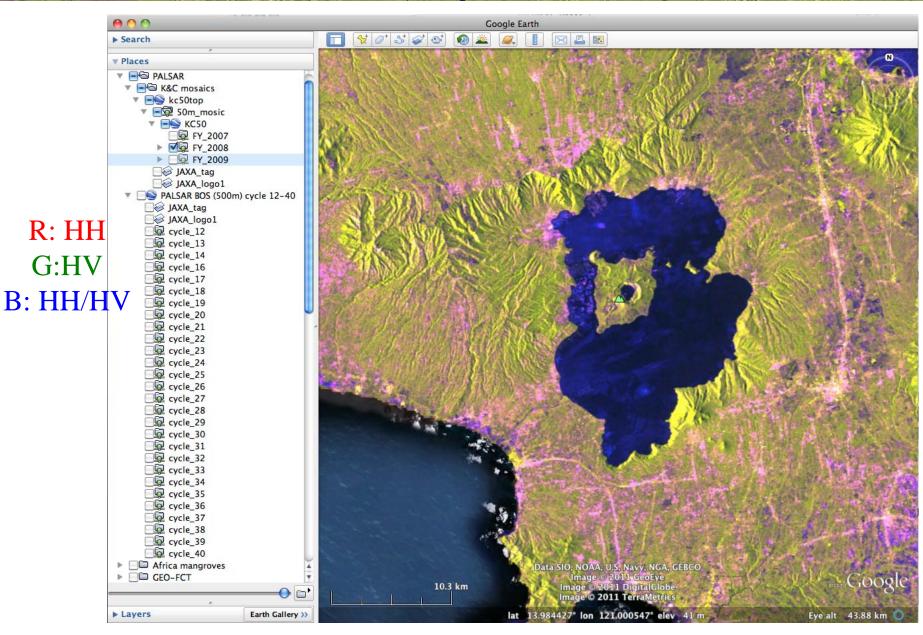
# ALOS An international science collaboration led by JAXA



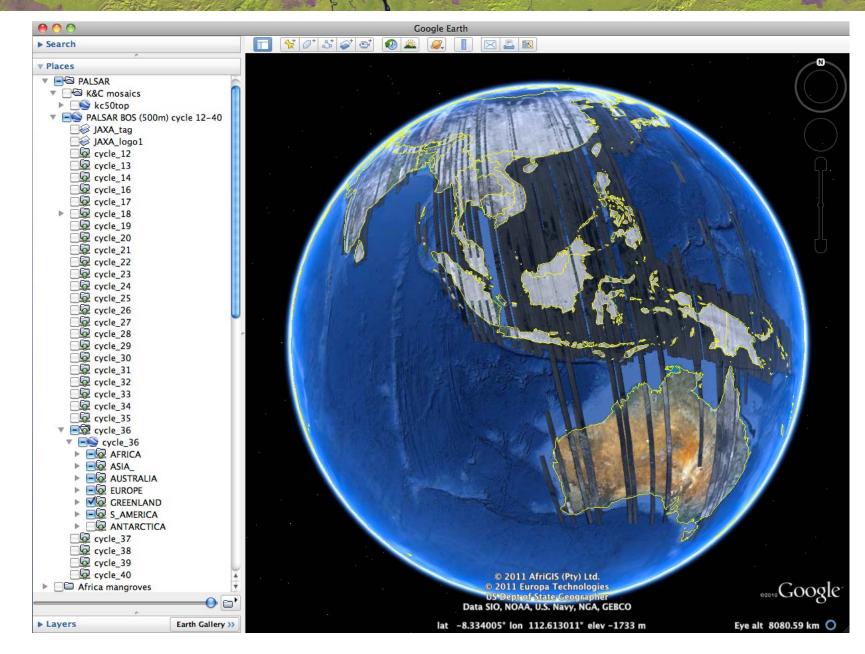




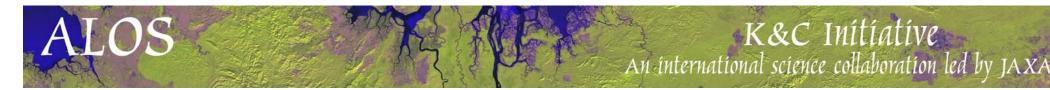
# ALOS An international science collaboration led by JAXA

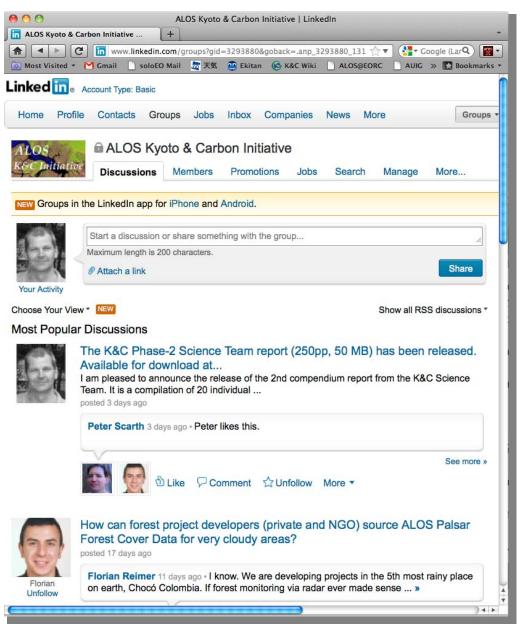


# **K&C** Initiative An international science collaboration led by JAXA



ALOS



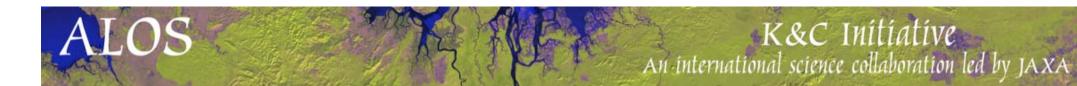


Interest group on the <u>LinkedIn</u> network with news on publications and other events.

Aim to disseminate K&C info to broader community. 80 members thus! (+34 since KC#15!)

Group name: ALOS Kyoto & Carbon Initiative

Request membership directly at group page at http://www.linkedin.com OR send email to ake.rosenqvist@soloEO.com







# Project information resources (project team access)



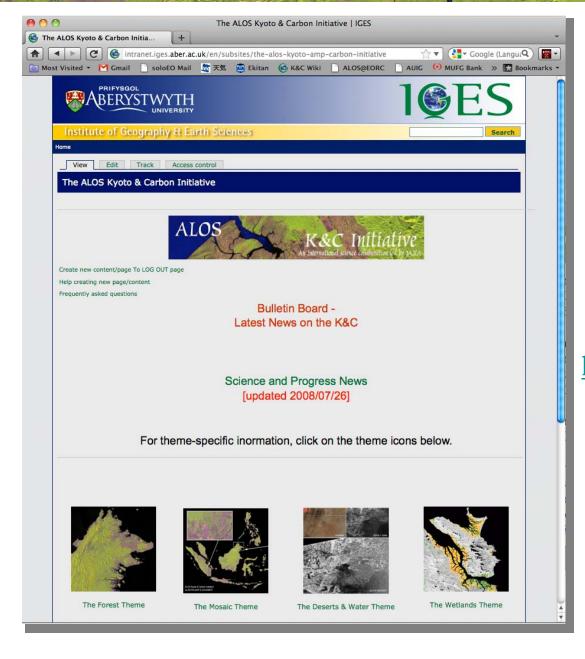








**K&C** Initiative An international science collaboration led by JAXA



Project info resources

The K&C Wiki Site Hosted by Aberystwyth Univ.

A place for exchange of project information and data. Improved usage during Phase 3

http://intranet.iges.aber.ac.uk/en/s ubsites/the-alos-kyoto-ampcarbon-initiative/latest-news

> Log in ID: ALOS-KC Passwd: ALOS-KC



#### Science Team Phase-2 Reporting

NEW: Full report compendium (250pp, 50 MB) and individual reports are available HERE [Updated 2011/10/13]

#### K&C Phase 3

Results from the proposal evaluation finally available [Updated 2011/07/31]

Remote Sensing of the Environment - K&C Special Issue

On hold

K&C booklet

Booklet completed! Download PDF version of the publication HERE

K&C project presentation (Jan-2011)

# Project info resources

K&C Initiative

An international science collaboration led by JAXA

The K&C Wiki Site **Bulletin Board** 

Search

Keep an eye on it! Main place for sharing of info from the K&C secretariat (=me)

http://intranet.iges.aber.ac.uk/en/s ubsites/the-alos-kyoto-ampcarbon-initiative/latest-news

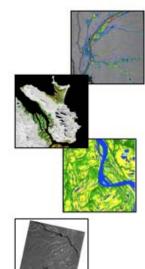


K&C Initiative An international science collaboration led by JAXA





# **Reports and Publications**























# Reports and publications

*K&C Science Plan*, *v*.3.1 (*March 2008*, 105 *pp*) K&C Science Team Reports Phase 1 (Jan 2010, 230 pp) K&C Science Team Reports Phase 2 (Oct 2011, 250 pp)

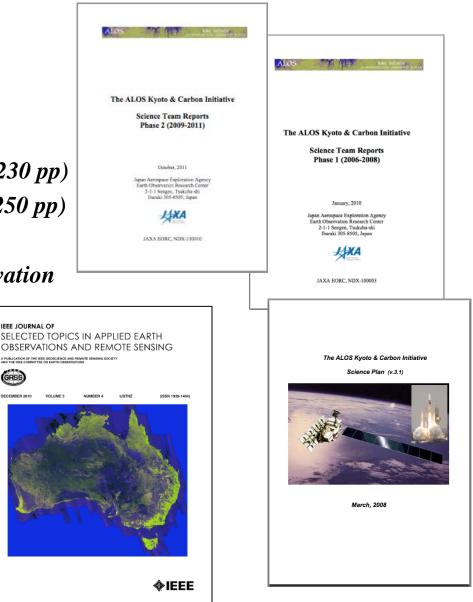
**IEEE** Journal on Special Topics in Earth Observation and remote Sensing (J-STARS) IEEE JOURNAL OF Vol. 3 No.4, Dec. 2010

GRSS

- Special Issue on K&C: Phase 1 results
- 10 papers from Forestry, Wetlands, **Desert and Mosaic Themes**

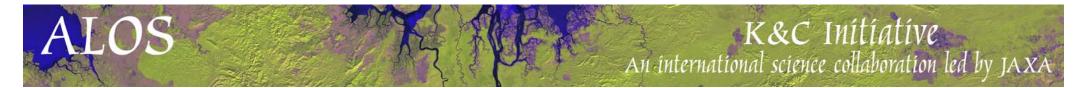
ALOS

All reports and individual papers available on the EORC K&C Homepage and the K&C Wiki

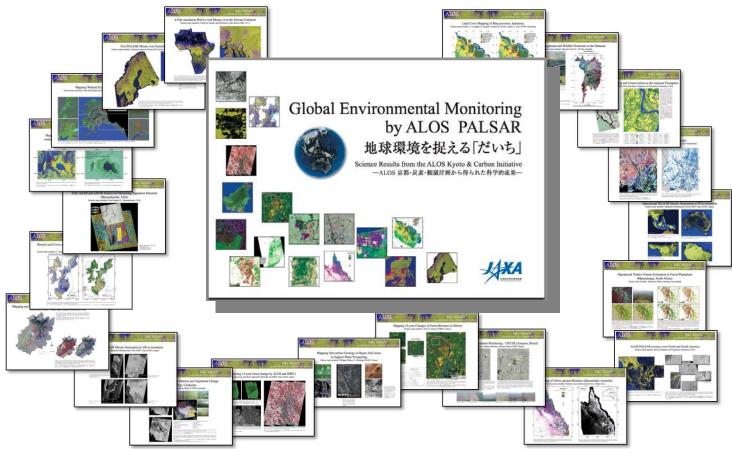


K&C Initiative

An international science collaboration led by JAXA



# Illustrated K&C Booklet (85 pp) published Sept. 2010 35+ project descriptions in English and Japanese



Digital copy (PDF) available at K&C Homepage and K&C Wiki