

The 14th Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) Science Team Meeting

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The 14th ASTER Science Team Meeting was held in December 9 - 12, 1997, at the Tokyo International Forum in Yurakucho, Tokyo, Japan. There were approximately 100 participants representing the ASTER Science Team, Jet Propulsion Laboratory(JPL) ASTER Science Project, Goddard Space Flight Center(GSFC), Earth Remote Sensing Data Analysis Center (ERSDAC), Japan Resources Observation Systems Organization(JAROS), the ASTER Ground Data System(GDS) Project, the instrument vendors, and the Japanese algorithm development contractors. Four-day meeting was composed of two plenary sessions and several individual Working Group meetings.

Plenary I, Tuesday Morning, December 9

H.Tsu (GSJ: Geological Survey of Japan), ASTER Science Team Leader, welcomed the participants and opened the Plenary Session.

Y.Yamaguchi (Nagoya University) reported on Meeting activities and Status.

M. Kudoh(JAROS) reported on the ASTER and Spacecraft I&T Status . He said that the Bus subsystems and all instruments integration completed until early November. Thermal vacuum Test is planned in January 1998 for one month. ASTER Initial Comprehensive Performance Test and ASTER Special Test were performed in Mid October 1997. ASTER instrument itself has been sustaining good performances obtained at POST-BAT at LMMS.

M. Pniel reported on a summary of EOSDIS Status listed below.

- * The EOSDIS connections to National Center for Atmospheric Research and Toronto for MOPITT are scheduled for January.
- * Polar ground station development activities are on schedule for contingency support of AM-1 launch and operations.
- * Flight Operation Segment delivered Release B in September and Release B patch December 17 to correct performance problems and add missing functionality.
- * "Mini-EDOS(EOS Data and Operations System)" at Valley Forge is routing Science data produced during spacecraft I&T to all instrument teams except ASTER.

H. Watanabe (ERSDAC) presented an current status of ASTER GDS. He presented the major milestones of US-Japan Meeting during FY 1995 and 1997, and talked about schedule of prelaunch activities, Interface documents and Hardware Procurement.

ACTIVITY REPORT

F. Palluconi reported on a summary of discussions listed below at EOS IWG Meeting in November 1997.

- * EOSDIS will support processing to Level 2 for 25% of AM-1 data in year one, 50% in year two, 75% in year three and 100% in year four.
- * EOS may make requests to ASTER for coverage of specific sites on an fast response basis.
- * The EOS Project would like to increase EOS visibility through the release of new and interesting science results as soon after launch as practical and then on a regular and continuing basis.
- * A new associate administrator for MTPE may be selected in December.
- * For the AM-1 platform, all the major system tests remain to be complete but a June 1998 launch is still possible although there is no schedule margin. The schedule will be clearer once the system thermal Vacuum test is successfully completed (January 1998).

A. Kahle reported on a summary of discussions listed below at SWAMP Meeting in November, 1997.

- * The results of Thermal Vacuum Test will be issued in January 1998.
- * EOS AM-1 Spacecraft and Instrument Status
 - EOS Project is still on schedule (but a tight schedule) for launch on June 30,1998.
- * Instrument Status Reports
 - MODIS was delivered to Valley Forge and is now on the spacecraft.
- * JGR Special Issue
- * EOS Validation Plan Concerns etc.

Y.Yamaguchi (Nagoya University) summarized the OMPWG ad-hoc meeting that was held in September 17 to 19,1997 at ERSDAC in Tokyo. The main topics of the meeting included:

- * xAR resource allocation and tracking

- DAR allocation plans for various user categories were agreed 40000km² per one proposal by AO user , and 160000km² for ASTER Science team member.
- * ASTER AO status
 - More than 100 letters of interests had been received by September 16,1997, in response to the Japanese pre-announcements.
 - Formal Japanese AO materials will be distributed in February 1998.
 - In US, ASTER user authorization site on WWW is finished.
- * ASTER LTIP(Long Term Instrument Plan)
 - Already signed by H.Tsu(ASTER Science Team Leader), A. Kahle (US ASTER Science Team Leader) ,M.King(EOS Senior Project Scientist, GSFC) and Y.Kaufman(EOS AM Project Scientist).
- * Scheduler and IST(Instrument Support Terminal) development status
 - The scheduler was delivered to GDS at the end of November 1997.
 - IST schedule and status were reported.

M. Pniel reported on the action items of the OMP WG ad-hoc meeting.

H. Sekine (Mitsubishi Research Institute) presented on STAR collection status. The main topics of the status included:

- * STAR Collection Schedule
 - STAR for ICO (Initial Check Out) Phase will be completed by February 1st, 1998.

B. Molloy (JPL) presented on STAR Collection status of US.

- * 226 observation requests received
 - >90 researchers from 20 countries
- * STAR Committee evaluation is underway
 - Final assessment due mid-January 1998
 - All approved early mission STARs to be entered via Web tool by 15 January for final transfer to GDS by 1 February 1998.
- * Early mission phase STAR of Announcement for requests made mid-October

S. Tsuchida (GSJ),H. Tonooka(Ibaraki University) announced the plan of measurements of the EOS Field Campaign in December 13 to 14, 1997 at Tsukuba area and Kasumigaura Lake,Ibaraki,Japan.

A. Kahle presented a IEEE TGARS EOS AM-1 Special Issue(ASTER PAPERS).

T. Kawakami (ASTER Science Project Manager, ERSDAC) presented the URL address of Japanese ASTER Science Server at ERSDAC including ASTER User's Guide, A/O, ASTER News and so on.

Y. Yamaguchi asked each working group to discuss on the following issues:

- * Algorithm Validation Plan -Initial Check-Out(ICO) Phase-;
- * Algorithm Update Plan -After Launch -;
- * STAR Collection.

I. Sato(GSJ) announced to all Science team members to give me any comments about User's Guide.

The first plenary session was followed by a short tour to observe the ASTER GDS Facility at ERSDAC on December 9.

Plenary II, Friday Afternoon, December 12

Y. Yamaguchi summarized the discussion of STAR committee. The topics of the discussion included:

- * STARs during Initial Checkout Phase(ICO)
 - Data acquisition for global mapping will be started in the ICO Phase.
 - All the parameters have been fixed and will be transferred to GDS soon.
- * STAR Proposals during Normal Phase
- * xAR Collection Schedule
 - Collection schedule was changed;
 - Proposal by January 25th, 1998 and xAR parameters by March 1st, 1998
 - STARs will be accepted anytime before and throughout the mission period.
 - DARs will be input through IMS after July 1998.
 - We agreed that will be schedule only in the normal operation phase.

H. Kayanne (Tokyo University) presented the agenda and a summary of the Ecosystem Working Group meeting. The presentation included:

- * Algorithm development for ecosystem mapping and surface heat fluxes
- * Ecosystems WG STAR's

M. Kishino (The Institute of Physical and Chemical Research) presented the agenda and a summary of the Oceanography Working Group meeting. The presentation included:

- * Discussion about Collaboration with MODIS Ocean Team
 - for sea surface temperature
- * Present status of Oceanography WG STAR
- * Future Oceanography Meetings
- * Algorithm for special product

- * Preliminary report of 1997 Lake Shinji Airborne/Field Campaign
- * Turbidity analysis in Tokyo Bay by LANDSAT/TM after atmospheric correction

M. Urai (GSJ) presented the agenda and a summary of the Geology Working Group meeting. The presentation included:

- * Volcanoes for monitoring including IDS team request
- * Define Global Mapping acquisition time for non-desert areas
- * Volcano Map Products
- * STAR status

S. Hook(JPL) presented the agenda and a summary of the Airborne Working Group meeting.

Y. Ninomiya(GSJ) reported on the agenda and a summary of Spectral Library Committee. The presentation of the Committee included:

- * Update on the US ASTER spectral library
- * Update on the Japanese ASTER spectral library
 - Japanese spectral library will be able to open the WWW site near future.
- * Recent spectral measurements of vegetation, rocks and minerals

H. Fujisada (Science University of Tokyo) summarized Level-1 Algorithm Development Status, Geometric Validation Plan, Ground Control Point (GCP) Library in Geometric/Level-1 Working Group. His presentation included:

- * Level-1 Algorithm/Software Development Status
 - Header Information Update: New version (Ver.2.3) of L1 Data Product Specification was released and distributed.
- * Browse Header Information Update
- * Parallax Correction Algorithm Update
 - Evaluation results using the 1km coarse DEM: The accuracy is about 0.3 pixels (3 sigma).
- * Inter-telescope Registration Algorithm Update
- * Geometric Validation Plan Update-Japanese Plan
- * Geometric Validation Plan Update-US Plan
- * Observation Plan for Geometric Validation
- * GCP Library Preparation Plan Update -US Plan
 - Report of SWAMP GCP Working Group that will fund preparation of control.
- * GCP Library Preparation Plan Update - Japanese Plan

S. Rokugawa (Tokyo University) presented the agenda and a summary of the Temperature-Emissivity Separation (TES) Working Group meeting. The topics included:

- * TES algorithm

- Comparison between Japan and US TES code results base on the various materials shows very small differences.
- Japanese science TES was transferred to GDS and now under implementation.
- EOSDIS TES code updated to conform with the latest ATBD version 2.3 and QA code is now in place.
- US side adopted Emissivity-ratio rather than radiance-ratio in TES Code.
- * QA status
 - Japan side proposed to exchange the Users guide information relevant to QA items.
- * Field campaign short report
- * Milestone and Initial check out program
 - TES parameter tuning, if necessary, will be done from 40 days to 105 days after launch and will be updated after 18 months that MODIS data will be available.
 - TES algorithm validation include TES parameter tuning, parameter transfer to GDS if necessary, some field tests synchronized with satellite.
 - Long term TES parameter update scenario

Y. Yamaguchi reported on the discussions of the OMP(Operation and Mission Planning)WG in the meeting. His presentation included:

- * xAR cancellation procedure and Not-OK to OK flag change
- * User Categories Issues, User ID Update
- * Japan AO and US User Authorization Status
 - Formal AO announcement (Japan) will be made in January 1998.
- * xAR Collection Status
- * Cloud Prediction Data Issues
- * Mission Guideline Status
- * Mission Procedure Outline
- * Mission Analysis Tool (MAT) Status
 - Ver.0 (Query generation and result display only) will be completed in March 1998.
- * Scheduler Status
- * Operation Simulator Status
- * IST Status

M. Pniel reported on the results of OMP WG Action Items.

F. Palluconi (JPL) presented the agenda and a summary of the Atmospheric Correction Working Group meeting. The topics covered included:

- * Status of Level 2 software
 - Ver.2 has been delivered to US scientists and will be delivered to EDC in February.

- Algorithm changes (as long as they are small) are due February 1st 1998.
- * VNIR/SWIR Results from 1997 Lunar Lake
 - The summary of June field campaign results for the VNIR/SWIR
 - Surface reflectance retrievals agreed to better than 0.01 in reflectance at both low(0.08) and high(0.5) reflectance.
- * TIR Results from 1997 Railroad Valley
 - TIR found up to 4 K difference between the radiometric and bulk temperatures at Lockels Ponds.

K. Arai (Saga University) reported on the agenda and a summary of the Radiometric Calibration Working Group (CAL WG) meeting. The presentation of the WG included:

- * Calibration Plans for each subsystem in the initial checkout period and Prelaunch Calibration Coefficients
- * Destriping issue & PFM Test
- * Subsystem Level of PFT data and Prelaunch Calibration Coefficient
 - The results of VNIR test showed that PD output had overstepped the caution limitation. Instrument team is investigating the causes of the result.
 - Some detector anomaly of SWIR Band 6 were detected in the Lamp-A calibration data. Instrument team is investigating the causes of the result.
- * Preflight Cross Calibration Activities
- * Lunar Calibration & Results from PFM Test Data Analysis
 - Observation dates of Lunar Calibration was proposed on September 4th or October 2nd, 1998.
- * Status of Radiometric Calibration Coefficient Generation Method
- * Detailed Report on the previous Joint Field Campaign
- * Field Campaign Plan in Tsukuba from December 13 to 14.
- * Activities and Operation Plan in Initial Checkout including calibration test sites
- * ATBD revision
- * STAR status
- * User's Guide
- * Status of Radiometric Validation Plan Doc.
- * Status of IEEE Issue
- * New Action Special Validation of stray light effect cross Calibration Method

H. Murakami (Geographical Survey Institute) reported on a summary of the Digital Elevation Model Working Group (DEM WG) meeting. The presentation of the WG included:

- * ATBD progress report
- * Early mission phase target for DEM validation sites
- * Status of DTED
- * Status of US DEM software/hardware RFP and production plans
- * DEM WG validation site presentations

* DEM processing time of Japanese algorithm

I. Sato (GSJ) reported on the agenda and a summary of the Higher Level Data Product Working Group (HLDPWG) meeting. The presentation of the WG included:

* ASTER User's Guide

- After Science Server is available in January in 1998, it is notified to AST members for additional evaluation.
- US will begin in the next March time frame, available to public in October 1998 time frame.

* Validation Data Base update

- Reported on the current status and development in 1997 FY.

* General Discussion

- The flow and summary on the Expedited Data to take common understanding of its usage for HLDP validation. Need to know the nature of Expedited Data, different with L1A and L1B data.
- Usage of L1 product with Ver.0.4 and Ver.1.0 parameter files. Ver.0.4 is principally for PR product generation. Ver.1.0 is formal one for HLDP algorithm validation.

M. Pniel invited the attendees to the next ASTER Science Team meeting scheduled to be held June 28-July 2, 1998, at Pasadena, California, U.S.A.

S. Machida (ERSDAC) explained about Logistics for the Field Campaign in Tsukuba area.

The meeting was closed by A. Kahle who called this a significant and productive meeting in which many issues were resolved in off-line sprinter meetings as well as in the scheduled on-line meeting.