MODIS STATUS SUMMARY—11-2006  
prepared by  
Vincent V. Salomonson  
MODIS Science Team Leader

MODIS Science Team Meeting

The attendance (near 250) at the MODIS Science Team meeting was quite substantive and the results presented in oral and poster presentations were very indicative of good progress continuing to be made. A summary of the meeting will be prepared for the Earth Observer and perhaps for other publication opportunities. The participation by so many of the Science Team and others is much appreciated. Presentations made at the meeting and made available so far for posting are show at:  
http://modis.gsfc.nasa.gov/sci_team/meetings/200610/.

The MODIS Science Team Leader (VVS) is accumulating inputs and suggestions from the MODIS Science Team, and others, for updates to the Terra Mission Extension Proposal previously submitted and for other input to the Aqua Mission Extension Proposal. There have been quite a few inputs received before the MODIS Science Team meeting and during the meeting. They are quite helpful. If any other ideas come up, please send them to  
Vincent.V.Salomonson@nasa.gov.

In a broad, overall sense, everything regarding the MODIS sensors, the data processing, and publication progress are very similar to last reports. The following sections of this report provide some details in each case.

MODIS Sensors

Up to the middle of November the Terra and Aqua MODIS sensors in are operating nominally.

As reported in August, the Aqua spacecraft has been going through a series of Inclination-Adjust Maneuvers (IAM) to maintain the 1:30 P.M. – 1:45 P.M. equator-crossing time specification. Various considerations have resulted in the rest of the IAM’s being delayed until the Spring of 2007. A tentative schedule for the IAM’s in the spring is shown below.

<table>
<thead>
<tr>
<th>Sun</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 March</td>
<td>CD-14</td>
<td>12 CD-15</td>
<td>13 CD-16</td>
<td>14 Aqua IAM #12 CD-1</td>
<td>15 CD-2</td>
<td>16 CD-3</td>
</tr>
<tr>
<td>18 CD-5</td>
<td>19 CD-6</td>
<td>20 Aqua DMUM (?) CD-7</td>
<td>21 Aura IAM #9 CD-8 EQUINOX</td>
<td>22 CD-9</td>
<td>23 CD-10</td>
<td>24 CD-11</td>
</tr>
<tr>
<td>25 CD-12</td>
<td>26 CD-13</td>
<td>27 CD-14</td>
<td>28 Aqua IAM #13</td>
<td>29 CD-16</td>
<td>30 CD-1</td>
<td>31 CD-2</td>
</tr>
</tbody>
</table>
The issues surrounding the Terra Solid State Recorder (SSR) and the loss of Printed Wire Assemblies (PWA’s) are to be presented to NASA HQ toward the end of the year paced by availability of time and personnel at HQ and Goddard. It is hoped that HQ will approve the recycling of the PWA’s so that it can be done and not have to experience data loss unduly.

MODAPS Data Processing

The latest detailed information on all MODAPS efforts is at: http://modaps.nascom.nasa.gov:8100/production/. Summaries follow below.

MODIS Atmospheres Processing on MODAPS
In the case of Atmospheres Data Processing in mid-November, the Atmospheres leading edge for Aqua forward processing was at dataday 315 (Nov 11, 2006) and generally running 1-2 days behind real time. The Atmospheres leading edge for Terra processing was at dataday 316 (Nov 12, 2006) and runs about 1 day behind real time.

For Atmospheres Collection 5 Reprocessing, the leading edge in mid-November was Terra Atmospheres at dataday 77 (Mar 18, 2002). The average processing rate for the week ending 11/14 was 14x. The expected completion date for the Terra reprocessing is January 28, 2007. Aqua reprocessing has already been completed.

Land Data Processing on MODAPS
Reprocessing of MODIS land data began in July, but some difficulties were encountered so it was decided that reprocessing would be restarted and begin at Terra first light as soon as further testing is completed. The Terra reprocessing will proceed to the date of Aqua first light. Thereafter, the combined Terra/Aqua interval will be reprocessed and Collection 5 reprocessing for Land is estimated for completion around mid-March 2008.

Land Collection 5 forward processing for Terra and Aqua is expected to start on dataday 001 (January 1), 2007. In the meantime Collection 4 algorithms are being used.

The leading edge for Land Collection 5 reprocessing in mid-November was at dataday 308, (Nov 3, 2000). The average processing rate for the week ending 11/14 was 2.7x. The Terra-only interval will be completed by mid-May, 2007.

Ocean Data Processing
All oceans processing is pretty much all accomplished at the OCDPS. Specifics of status should be gained by going to: http://oceancolor.gsfc.nasa.gov/. The following figures show the growth in ocean color from Aqua MODIS (as well as SeaWiFS) and SST from Aqua and Terra MODIS (courtesy of G. Feldman—see presentation made at Science Team meeting on November 2).

Science/Applications-related Publications involving MODIS
The Web of Science shows at mid-November an overall total of 1304 publications involving MODIS versus 1208 near the end of August—a growth of 96 in the last two-plus months. The total for 2006 is 331 to date versus 235 in April. In the MODIS-related papers listed below there are 3 shown at the beginning that have been identified, but not yet in the “Web of Science” listings. In the Web-of Science listings there are 56 Land-related papers, 34 Atmospheres-related papers, 2 Oceans-related papers, and 4 instrument performance-related papers. Overall, as continues to be the case, there are some very interesting results in all categories being reported.


Mildrexler, D. J., Zhao, M., and Running, S., Where Are the Hottest Spots on Earth?, Eos, Vol. 87, No. 43, 24 October 2006


Kharol SK, Badarinath VS, Impact of biomass burning on aerosol properties over tropical urban region of Hyderabad, India, GEOPHYSICAL RESEARCH LETTERS 33 (20): Art. No. L20801 OCT 17 2006,


Zhang YQ, Wegehenkel M, Integration of MODIS data into a simple model for the spatial distributed simulation of soil content and evapotranspiration, REMOTE SENSING OF ENVIRONMENT 104 (4): 393-408 OCT 30 2006


Brindley HE, Russell JE, Improving GERB scene identification using SEVIRI: Infrared dust detection strategy, REMOTE SENSING OF ENVIRONMENT 104 (4): 426-446 OCT 30 2006


Remer LA, Kaufman YJ, Kleidman RG, Comparison of three years of Terra and Aqua MODIS aerosol optical thickness over the global oceans, IEEE GEOSCIENCE AND REMOTE SENSING LETTERS 3 (4): 537-540 OCT 2006


White JD, Scott NA, Hirsch AI, et al., 3-PG productivity modeling of regenerating Amazon forests: Climate sensitivity and comparison with MODIS-derived NPP, EARTH INTERACTIONS 10: Art. No. 8 2006

Hutchison KD, Pekker T, Smith S, Improved retrievals of cloud boundaries from MODIS for use in air quality modeling, ATMOSPHERIC ENVIRONMENT 40 (30): 5798-5806 SEP 2006


Jin ML, MODIS observed seasonal and interannual variations of atmospheric conditions associated with hydrological cycle over Tibetan Plateau, GEOPHYSICAL RESEARCH LETTERS 33 (19): Art. No. L19707 OCT 7 2006


Morton DC, DeFries RS, Shimabukuro YE, et al., Untitled, EARTH INTERACTIONS 9: Art. No. 8 2005

Morissette JT, Giglio L, Csiszar I, et al., Validation of MODIS active fire detection products derived from two algorithms, EARTH INTERACTIONS 9: Art. No. 9 2005

Schroeder W, Morissette JT, Csiszar I, et al., Characterizing vegetation fire dynamics in Brazil through multisatellite data: Common trends and practical issues, EARTH INTERACTIONS 9: Art. No. 13 2005
Remote sensing for grassland management in the arid Southwest, RANGELAND ECOPHYSIOLOGY & MANAGEMENT 59 (5): 530-540 SEP 2006

Morton DC, DeFries RS, Shimabukuro YE, et al., Cropland expansion changes deforestation dynamics in the southern Brazilian Amazon, PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 103 (39): 14637-14641 SEP 26 2006


Huang S, Siegert F, Land cover classification optimized to detect areas at risk of desertification in North China based on SPOT VEGETATION imagery, JOURNAL OF ARID ENVIRONMENTS 67 (2): 308-327 OCT 2006


Giglio L, Csiszar I, Justice CO, Global distribution and seasonality of active fires as observed with the Terra and Aqua Moderate Resolution Imaging Spectroradiometer (MODIS) sensors, JOURNAL OF GEOPHYSICAL RESEARCH-BIOGEO SCIENCES 111 (G2): Art. No. G02016 JUN 10 2006

Roberts DA, Dennison PE, Peterson S, et al., Evaluation of airborne visible/infrared imaging spectrometer (AVIRIS) and moderate resolution imaging spectrometer (MODIS) measures of live fuel moisture and fuel condition in a shrubland ecosystem in southern California, JOURNAL OF GEOPHYSICAL RESEARCH-BIOGEO SCIENCES 111 (G4): Art. No. G01S02 AUG 30 2006

Calle A, Casanova JL, Romo A, Fire detection and monitoring using MSG spinning enhanced visible and infrared imager (SEVIRI) data, JOURNAL OF GEOPHYSICAL RESEARCH-BIOGEO SCIENCES 111 (G3):


Sarkar S, Changamwong R, Cervone G, et al., Variability of aerosol optical depth and aerosol forcing over India, ADVANCES IN SPACE RESEARCH 37 (12): 2153-2159 2006


Pongracz R, Bartholy J, Dezso Z, Remotely sensed thermal information applied to urban climate analysis, ADVANCES IN SPACE RESEARCH 37 (12): 2191-2196 2006

Roskovensky JK, Liou KN, Simultaneous determination of aerosol and thin cirrus optical depths over oceans from MODIS data: Some case studies, JOURNAL OF THE ATMOSPHERIC SCIENCES 63 (9): 2307-2323 SEP 2006


Rigo G, Parlow E, Oesch D, Validation of satellite observed thermal emission with in-situ measurements over an urban surface, REMOTE SENSING OF ENVIRONMENT 104 (2): 201-210 Sp. Iss. SI SEP 30 2006


Roesch A, Roeckner E, Assessment of snow cover and surface albedo in the ECHAMS general circulation model, JOURNAL OF CLIMATE 19 (16): 3828-3843 AUG 2006

Chen X, Zhang Q, Zhou KF, et al., Quantitative assessment and analysis on the dynamic change of ecological capital in and areas, CHINESE SCIENCE BULLETIN 51: 204-212 Suppl. 1 JUN 2006


Han B, Kang LS, Song HZ, A fast cloud detection approach by integration of image segmentation and support vector machine, LECTURE NOTES IN COMPUTER SCIENCE 3973: 1210-1215 2006


Claudio HC, Cheng YF, Fuentes DA, et al., Monitoring drought effects on vegetation water content and fluxes in chaparral with the 970 nm water band index, REMOTE SENSING OF ENVIRONMENT 103 (3): 304-311 AUG 15 2006