

MODIS Technical Team Meeting
Thursday, October 19, 2000
3:00-4:30 PM

Vince Salomonson chaired the meeting. Present were Chris Justice, Bruce Ramsay, Mike Roberto, Bob Murphy, Skip Reber, Bill Barnes, Dick Weber, Steve Kempler, Gary Alcott, Wayne Esaias, Ed Masuoka, Sol Broder, Eric Vermote, and Barbara Conboy, with David Herring and Rebecca Lindsey taking the minutes.

1.0 Schedule of Upcoming events

- Ocean Optics XV
Monaco
October 16-20
- PORSEC 2000
Goa, India
December 5-8
- AGU Fall Meeting
San Francisco, CA
December 15-19
- Land Validation Meeting
At or near Goddard
January 22-23, 2001
- Atmosphere Group Meeting
GSFC (Bldg. 33, H114)
January 23, 2001
- MODIS Science Team Meeting
At or near Goddard
January 24 - 26, 2001
- EOS Investigator Working Group meeting
Ft. Lauderdale, Florida
January 30 - February 1, 2001

2.0 Meeting Summary

Salomonson presented Dick Weber with a matted and framed MODIS poster of the eastern coast of the United States in appreciation of his efforts.

2.1 Instrument Update

- Roberto reported that Terra/MODIS continues to experience formatter events—about 25 last week—with no known data loss. He reported that he had met with Bruce Guenther about the question of mirror-side uncertainty. Barnes reported that the preliminary conclusion is that MCST has not actually lost knowledge of mirror side, but that there is, perhaps, a 1% effect in the slope of the line that shows the difference between mirror side one and mirror side two. The effect is synchronous with the scan, and has a period of two scans.

In simplest terms, it appears as though the RVS differences between mirror side one and mirror side two are not constant; they seem to change over a long period of time. The effect is not seen on each mirror rotation, but rather over a period of around 90 days. The effect does not appear to be the result of mirror contamination. It is more likely due to noise in the system, perhaps from the power supply. Switching to Terra/MODIS B-side electronics would result in a different power supply. Guenther has said Paul Ondrus wants to have a meeting on Monday about what is required to make the switch.

The data on which the conclusions are based are scene dependent and widely spaced. MCST is in the process of collecting intermediate-stage data to better pinpoint the period over which the RVS differences change. The effect can be seen in the Level 0 and ocean color products. Esaias commented that even a 1% effect would negatively impact ocean color products.

- Guenther will develop a brief report on these mirror-sided observations within the week and will send a copy of that report to Roger Drake at SBRS.
- The Leonid meteor showers are coming up in mid-November. Each instrument needs to decide what it wants to do to protect itself against any potential damage. TRMM's approach is to shut down all instruments from six hours before to 6 hours after the peak of the shower. A similar approach on Terra might leave a 12-hour gap in our Golden Month coverage.
- The boards are out for Aqua, and the resistors have been changed. They are determining precisely what the gains are, and they may still change one or two to get close to the beginning values they want. As of yesterday, they had done initial changes in all of Band 31, and today's update says they have done all of Band 32.

2.2 GDAAC Update

- Kempler reported the last 8-day week processed by the GDAAC (data days 273-280) is still missing ten hours of data. They received the missing level 0 data yesterday, and they are still catching up. In the mean time, they have started processing the next week. They are currently processing a special request from MCST.
- To date, the GDAAC has archived close to 90 terabytes of data, which is roughly the equivalent of 180 days. Since most of these data are Level 1 data products, this amount mostly constitutes data that are released and available to the public.
- In response to an action item from the PI Processing meeting, Kempler has been looking into hardware availability, and the short answer is that by the end of November, GDAAC will have roughly three times more processing capacity than it currently has. How this will be utilized is still being discussed.

- In preparation for Golden Month processing, the GDAAC has received the "Golden PGEs" for the level 1A and level 1B algorithms. The Level 1 B (PGE02) is being successfully integrated, but the Level 1A (PGE01) doesn't match up with ESDTs. They are still waiting for PGE03 for the Cloud Mask. Kempler introduced Gary Alcott, who is the new operations manager. Alcott comes from EDOS.

2.3 SDST Update

- Masuoka provided a status chart for Level 2 data products in MODAPS for data day 249-272 (Attachment 1). Only two days are less than 99% complete. In general, things are coming out perfectly when they get perfect input from the GDAAC.
- Masuoka also provided thumbnail images of data coverage for days 257-271 (Available at the following URL: <http://modland.nascom.nasa.gov/browse/8day.cgi>). Apparent holes in the data coverage were discovered to be browse artifacts caused by bugs in the subsets generated by land surface reflectance.
- Masuoka provided a third chart, from Robert Wolfe, showing the EDC ingest volume from June 5, 2000, through October 15, 2000 (Attachment 2). The highest daily flow of data into the EDC for the period was just below 450 gigabytes (GB). The 16-day moving average peaked at 150 GB. The product flow has slowly increased from 90GB to 100GB. This product flow exceeds 50% of the 2/96 baseline volume (the agreed-upon limit imposed by the A+ Option budget reduction for the first year after launch.) However, the ESDIS Project has agreed to let MODIS send the extra volume to EDC since there is no long-term impact on archive storage.
- Justice commented that with the potential for using the Aqua hardware for reprocessing, we need to consider what capacity we actually have for ingest. Masuoka replied that even with the flow at 450 GB, the DAACs have been able to take it in. At some point, however, the DAACs will not be able to store it all.
- Masuoka reported that the Project Office had asked him to report on the volume of data being distributed to the science team. His estimates are that we are sending out about 440 GB/day, including 130 GB/day to the 250m Land ESIP, 125GB/day to the Atmosphere Science Computing Facility, and 50 GB/day to individual PIs (Attachment 3).
- Salomonson asked what MODAPS processing priorities are. Masuoka listed the following:
 - 1.) Incorporating PGE changes essential for Golden Month
 - 2.) Meeting public release dates for MODIS products
 - 3.) Getting all at-launch PGEs running in Version 2 MODAPS
 - 4.) Reprocessing
 - 5.) Incorporating the merged Aqua/Terra PGEs.

Salomonson commented that he had been thinking these were the priorities:

- 1.) Golden Month
- 2.) Validation
- 3.) Data products, including any special needs like the fire images from Montana this summer.

Masuoka commented that the three priorities for processing were being addressed and that Broder and Aslam were the contacts who prioritized special processing requests for MODIS in support of calibration, validation and special targets of opportunity. Priorities and production plans are reviewed on an ongoing basis at the weekly PI Processing meetings.

2.4 Land Update

- Justice reported that the SWGD (SWAMP Working Group on Data) report was delivered to Dolly Perkins and Yoram Kaufman.
- Salomonson asked Justice about the Land Discipline's possible contribution to President Clinton's proposed Millennium Assessment of global ecosystem health. Salomonson thinks they may want a 250-m global surface reflectance product. Justice says Land will be looking into it, and they would like to hear first what, exactly, is needed. There was also discussion about using an ocean color product. Esaias commented that the SeaWiFS product is more mature.

2.5 NOAA/NESDIS

- Ramsay and Broder presented information on the problem of missing granules in the delivery of data from EDOS to NOAA/NESDIS (Attachments 4 and 5). There are several possible causes, the highest probability cause being known problems with EDOS ftp implementation. Other factors may be that NESDIS MODIS server is on the front end of the first data transmission, which means it doesn't receive data that have been processed by EDOS to fix bit flips, for example. Finally, when data are restored to the GDAAC, the NESDIS server doesn't usually receive the reordered data because it is not useful to them after they have missed the short window needed for forecasting. Any solution based on retransmission of data would not be useful to NOAA.

Possible solutions to the problem include modifying the Level 1A software to handle those bit-flips that EDOS currently filters out in its processing, and waiting for an EDOS ftp upgrade that is expected in about a month.

Ramsay also reported that the installation of the 10Mb/second data line between NASA/GSFC and NOAA/FB4 is on track for mid-November. Procedures for evaluation and use of MODIS Snow and Ice Products by NESDIS operational meteorologists are under development. Arrangements are also being made for the delivery of NESDIS-produced, near-real-time MODIS Snow and Ice Products to the NSIDC DAAC and the National Ice Center. Finally, Ramsay brought to the group's attention the new NSIDC web interface for explaining how to order MODIS data, and complimented it.

2.6 MAST Update

- Conboy presented MAST's ideas for beginning the redesign of the MODIS web site, paying particular attention to clarifying the pathway for searching and ordering data. Salomonson expressed a preference for initially directing everyone to the EOS Data Gateway, and then pointing out the alternate paths, including the GDAAC's MODIS No-frills search and order system and the Land 250-m computing facility. Justice and Esaias requested that links be provided to browse images available through the Land and Atmosphere sites. The group recommended that the site provide a fast-track path for veteran users.

2.7 Project Update

- There was a general discussion of the DIS and its ability to meet the needs of the community. Also, Salomonson commented that all disciplines might want to think about what they could present at the upcoming IWG meeting. Murphy reported that there had been a discipline leader's meeting to discuss the agenda of the upcoming MODIS Science Team Meeting. People should start letting us know what they want to present, so that we can see how to fit it all in. There is a desire to make it a strong scientific activity.

3.0 Action Items Carried Forward

1. Salomonson: Work with Yoram Kaufman and Skip Reber to produce some metrics from the science community to describe the status of data processing as accurately as possible.

Status: Ongoing.

2. MODIS Science Team: Send updates on MODIS metadata terms/valids to Skip Reber (reber@skip.gsfc.nasa.gov). These are terms that enable users to search MODIS data. This is part of a request to the Terra Instrument teams to update metadata terms.

Status: Ongoing. Group needs Reber to clarify, reiterate the request.

3. Masuoka: Represent MODIS concerns on data throughput to EDOS.

Status: Ongoing. The Review Committee is now preparing a report articulating the impacts to the community.

4. Kempler to provide a hardware upgrade schedule, including direction on processing power.

Status: Ongoing.

5. Need discussion between SDST and NOAA on completeness of data and process by which we can get more rapid turn around on snow cover and also perhaps sea surface temperature.

Status: Ongoing.

6. Murphy asked disciplines leads to provide final updates to product release table.

Status: Ongoing.

7. Discipline leads to meet to resolve the issue of beta release code and science-quality code, and what we need to say about it.

Status: Ongoing.