

**MODIS Technical Team Meeting**  
**Thursday, March 6, 2003**  
**3 P.M., GSFC Building 33, Room E125**

Vince Salomonson chaired the meeting. In attendance were Barbara Conboy, Bob Barnes, Robert Wolfe, Eric Vermote, Skip Reber, Wayne Esaias, Shaida Johnston, Michael King, Bruce Ramsay, Steve Kempfer, Dorothy Hall, Bill Barnes, Jack Xiong, and Ed Masuoka, with Yolanda Harvey taking the minutes.

### **1.0 Upcoming Events**

- Data Products Review, March 10-11, 2003
- Ocean Color Meeting, April 15-17, 2003, Miami, Florida, USA.
- IGARSS 2003, July 21-25, 2003, Toulouse, France (abstracts deadline past).  
<http://www.igarss03.com/>
- 10<sup>th</sup> International Symposium on Remote Sensing by the International Society for Optical Engineering (SPIE). September 8-12, 2003, Barcelona, Spain (abstracts deadline past). <http://www.spie.org/info/rs>

### **2.0 Meeting Minutes**

#### **2.1 General Discussion**

Salomonson announced that the Aqua Science Working Group meeting would be held on May 28 and 29, 2003.

Salomonson indicated that he feels we need to give more consideration to when Aqua MODIS products will reach validated status. He noted a tentative schedule that Johnston had made, but thought that it deserved more study. Xiong said that the Aqua MODIS Level 1B code is validated, though there is a concern with the RSB LUT, which needs to be updated more frequently than the current schedule. At present the large portion of Level 2 and above are provisional (SST is validated now) with land products awaiting the implementation of the Aqua geolocation fix. Vermote asked if the L1B code would be completely validated within two months, and Xiong said yes. King asked if it would be done by Aqua's first anniversary (May 4, 2003), and Xiong said yes. Xiong pointed out the two issues to be resolved before L1B validation: (1) SWIR thermal leak correction sending band and (2) RSB LUT update frequency. Salomonson asked about the validation status of the Level 2 and above code, and Vermote estimated that the Land products would be validated about two months after the anniversary. Salomonson concluded that a tentative goal for seeing Aqua MODIS products that are validated would be around the early part of summer 2003, and that we would continue to examine this matter for further definition.

Ramsay asked if the provisional rating of the Land products means that they're released? Salomonson said no, but they should soon be available once the geolocation issue is completely fixed. However, Atmospheres and Oceans data are available. Wolfe said that the soonest Land products would be released is the end of March. Esaias asked if Bands 31 and 32 are validated, and Xiong said yes; it's just the RSB LUTs holding things back, plus he would like to have the SWIR sending band issue resolved by then (Chris of U. of Wisconsin and Eric Vermote are working with MCST on this issue). Esaias said that

Oceans will have to reprocess its code before declaring it validated, so they need to figure out when they can start reprocessing. Johnston said that the current estimate of starting Aqua reprocessing would be around the end of 2003, but that requires having all the right LUTs, etc. Esaias said that if Aqua stays stable, they might be able to declare some data from January 2003 to April 2003 as validated.

Salomonson said that one of the first things that will need to be done soon is to update the ATBDs. Justice concurred, but noted that ATBDs are just the background, not the actual code in use at any given moment. Salomonson said that that is true, but that if, for instance, a graduate student wanted to understand what MODIS is doing, the ATBDs would be the starting point. Johnston said that the ATBDs are the theoretical basis of everything, and the software we provide doesn't document those assumptions, which is why keeping the ATBDs reasonably up to date is important. Esaias noted that we don't have the manpower to always keep them up to date, since changes are always being made. Johnston agreed, but thought that doing a yearly update wouldn't be out of the question. Ramsay said that he had an idea about automating software delivery and updating the ATBDs/users guides. He suggesting creating a routine that would compare the existing source code to the updated code, and if a difference was found, it would then pass the file on to the user guide, which would keep it updated and be much more efficient. Johnston said that it sounded like a good idea to her.

Vermote raised again the question of when Aqua reprocessing would begin and whether Terra reprocessing would happen at the same time. Johnston said that we haven't talked about when reprocessing would start, and Wolfe said that the issue should start being discussed at PIP meetings where they can reach a tentative conclusion to be discussed at the MTT meetings. At the moment, it doesn't look like Aqua processing will start until after Terra Collection 4 reprocessing has completed. Salomonson said that we should finish Collection 4 around November 2003, then possibly do a reprocessing of Aqua, then six months after the end of Collection 4 we could start Terra Collection 5. Esaias said that he would like Oceans to continue forward past the end of December 2002, and then reprocessing can go until the end of December 2002. Salomonson asked that Johnston start working out scenarios that would help us visualize what might occur.

Salomonson brought up the issue of the next MODIS Science Team meeting and its purpose and date. Justice said that Land needs to hold a session after the proposals are in, so knowing when the next Science Team meeting is going to be would help. Conboy suggested sometime in August, since that's six months after the last meeting. Salomonson asked when the next IWG meeting is going to be, and King said that it would be some time in the August/September time frame. Masuoka said that it takes roughly 9 months after the disciplines decide on what changes to make in the next reprocessing to get production ready code running for the reprocessing. Three to four months are required for science team members to make the changes and deliver code to SDST. Five to six months are involved in integration, testing and redelivery of science code. If disciplines were to wait until August of 2003 to work out details of the next reprocessing, then the earliest the Collection 5 reprocessing could start is around the beginning of June 2004. Esaias said that because we don't know who is going to be on the Science Team and which products are going to be continued, we might not be able to start that soon. Masuoka said that he thought that the Collection 5 reprocessing would only use science software from the current team, not any new members; added as a result of the

recompete, since it takes about a year to get new science code to where it is ready for a major reprocessing. Justice said that he will be calling a short Land session in the May/June 2003 timeframe, and King said that he is planning on doing something similar. Salomonson said that he would try to work around those meetings, but he needed to think about it more first.

Johnston reported that we still need to get a feel of what the DAAC statistics for the Atmospheres and Land disciplines mean (from 3/5/03 meeting), which can then be brought up for discussion at the PIP meetings. She noted that the Oceans statistics gave a good idea of which types of products were being ordered in large volumes.

Ramsay reported that the NOAA operations people that do interactive fire mapping want Aqua fire maps, and wondered when they would be available. Justice said that Land is still waiting on completing the geolocation fix, and that they're going to look at the data over next few days. Ramsay hoped that the data would be ready by the end of March, since the fire season in North America will be starting soon.

Ramsay reported that the NOAA/NESDIS Office of Research and Applications provided funds for a grant at UMD to work on the MODIS-VIIRS Land Surface Processing System. The initial effort will be to operationalize the MODIS Land Rapid Response System.

## **2.2 Instruments**

Xiong reported that both instruments are doing fine.

Xiong reported that the high-rate data line hasn't been installed at the Aerospace building yet (the new MCST offices), so they've missed a few days of data. Hopefully it will be installed soon. Meanwhile, MCST is considering the possibility of connecting two machines (computers) on-site with the DAAC in case the high data rate line is not ready and the "sneak-net" cannot keep up with the data need during deep space maneuvers. Currently they are also working on the SWIR crosstalk issue and the striping on the MWIR band, and hope to finish them at the end of March. In general the L1B algorithms and the code are stable.

The Deep Space Maneuver is still on schedule; the first one will occur on March 26, with another that includes the moon on April 14. Xiong said that he is working on coordinating with SeaWiFS on the second maneuver to view the Moon.

### *2.2.1 Aqua MODIS*

Xiong reported that the software patch to fix the command drop issue is going to be uploaded soon. MCST IOT has successfully completed SD observations for the study of m1 impacts on the Ocean color bands by keeping the Solid Diffuser Screen in place for two days.

Johnston asked when the geolocation patch for Aqua would be put in, and Wolfe said that the LUT went in today (March 6, 2003).

On the Aqua MODIS SRCA Lamp issue, Xiong said that he talked with Roger Drake of SBRS about testing to find out which lamp is malfunctioning.

## 2.2 DAAC

Kempler reported that the Goddard DAAC has had some problems in the last few days with the database and some CPUs, but it's still running well and on schedule. The installation of the Gigabit Ethernet has been delayed to after the Deep Space Maneuvers are completed.

Kempler reported that he submitted his slides for the Data Products Review. He reported in those slides that there is 3 TB of MODIS data going out of the DAAC per day, and he also addressed some questions of how the DAAC is working. As far as distribution is concerned, Kempler said that he is considering some changes for the front end of the WHOM/EDC/DAAC interface that will allow views into the data and data products, which should make the data more accessible for users.

## 2.3 MODAPS

Masuoka reported that SDST is working on making the delivery of science software to Pat Coronado's direct broadcast site more automated. He also said that SDST met with Pat Haggerty, of the NOAA MODIS/AIRS near real-time processing system, to discuss ways to ensure that the NOAA system is running the latest MODIS production software. A memorandum of understanding is being written by SDST that describes the process of software transfer to NOAA's system. A series of Perl scripts will be used to produce and stage new deliveries of science software to an ftp directory that both NOAA and Pat Coronado will be able to access to download science software. Ramsay commented that script automation sounds good to him.

Masuoka handed out a summary of MODIS product volumes being archived by discipline per day (in GBs at a 1x processing rate). He noted growth in the standard products (according to the '96 baseline), as well as in the additional products and future products not in that baseline. He also compared those totals to the '00 baseline. He then showed a chart of the cumulative product volume in the archives, and projected the amounts archived at the GSFC and EDC DAACs through the end of 2009. He noted that the charts don't specify what portion of the volume that MODIS products take up at each DAAC or whether those volumes are compressed, but he plans on finding out soon from the ESDIS people. He addressed the issue of what will happen in the archives if the requested amount of funding is not provided and if the instruments last longer than projected, and noted that he's working on an approach to accommodating all the data. Salomonson asked if there is an immediate issue for MODIS, and Masuoka said no, but we do need to come up with and implement a plan before the end of 2004, since that is when the archives will fill up. Reber asked Masuoka if the totals from his charts included rolling off old products and old versions, and Masuoka said yes and that the totals are based on the ESDIS ECS contractor agreement approved after the SWGD (SWAMP Working Group on Data) augmentation for 2002.

## 2.4 Cryosphere

Hall reported that she has been talking to Claire Parkinson and Jack Xiong on the Band 6 inoperability issue, and found out that the number of bad detectors is now up to 14 out of 20. She said that she had been planning on using the good detectors, but now is not sure since more seem to be going bad. Barnes said that if the system is reset again, more detectors could be lost on that band, or some may come back. Salomonson asked if we can use the current good detectors to set thresholds for Band 7, and Hall said the Snow

and Ice Team is looking into this, though it will be tricky. The snow maps derived from the detectors on the Terra Band 6 and the Aqua band 7 would have to exactly match the Terra MODIS product.

## **2.5 Atmospheres**

King reported that production of the Italy course CDs is complete, and he's taking some of the 5000 CDs to Headquarters for distribution at the Terra/Aqua Data Products Review. Salomonson said that he would be taking down some of the Introductory MODIS Multidisciplinary CD's that recently have been updated and revised.

## **3.0 Action Items**

### **3.1 New Action Items**

3.1.1 Johnston to create possible scenarios of when to reprocess Aqua and start Terra Collection 5.

### **3.2 Old Action Items**

3.2.1 King and Kempler to work together on getting ESDTs for the new Atmospheres L2 data product.

Status: Open.

3.2.2 Kempler to coordinate with Oceans group on creating documentation for the DAAC on the new Oceans L1A data subsets.

Status: Open.

3.2.3 Wolfe to contact Herring about the shopping cart feature for the Earth Observatory website.

Status: Open.

3.2.4 Tech Team to further discuss TRW using MODIS data for validation of the NPP/NPOESS production process.

Status: Open.