

MODIS TECHNICAL TEAM MEETING

April 10, 1997

The MODIS Technical Team Meeting was chaired by Vince Salomonson. Present were Dorothy Hall, Belinda Kalinin, Bob Kannenberg, Dick Weber, Harry Montgomery, Wayne Esaias, Steve Wharton, Locke Stuart, Bruce Guenther, Steve Ungar, Michael King and Al Fleig.

1.0 SCHEDULE OF EVENTS

May 13 - 16 MODIS Science Team Meeting, College Park Holiday Inn

2.0 MINUTES OF THE MEETING

2.1 MODIS Project Reports

Weber reported that the instrument is doing well, and that it was not necessary to break thermal vacuum early in order to fix leaks. Guenther has requested a couple of additional tests, and a decision should be made by tomorrow (April 11) as to whether these will be conducted. Guenther anticipates that thermal vacuum testing will be finished on Monday, April 14. Backfill and cleanup will take up roughly two days, and the instrument will be ready to remove from the thermal vacuum chamber on Thursday, April 17. Salomonson asked when polarization tests are scheduled, and Weber replied that these tests will be done roughly a week-and-a-half from now.

2.2 MCST Reports

Guenther presented a memo and series of charts related to recent sun-gun testing conducted by Tom Pagano to look at stray light within the instrument cavity. By positioning the gun at different points in the room, Pagano acquired some elevated signals on the blackbody. Guenther pointed out that this test was not calibrated but, rather, purely qualitative; after plotting and analyzing the data, Pagano was able to attribute some of the peaks to spurious scattering, as opposed to contamination of the onboard calibration source. According to Pagano's memo, the worst sensitivity was -60 degrees, which is off the scan line. Guenther went back and looked at instrument response and the blackbody during a response vs. scan angle test, where the light source is moved across 12 positions while illuminating the scan mirror. Bands 13, 14 and 15 appeared to be the worst-case results, with DN's up to about 6 counts. These are very preliminary results, but if these results prove to be real, then corrective actions would appear necessary.

Guenther reported that Jim Young performed some of his own tests and then spoke with Tom Pagano. They theorized that some of the peaks in the data set were attributable to the fact that a lot of work had been done to the instrument between the times that data were taken. When these peak points are ignored, emissivity compares favorably. Guenther suggested that a stray light/elevated signal problem might be

solved by changing the geometry of the scan cavity, to ensure that light cannot enter. He added that as the instrument temperature decreases, so does the magnitude of the problem. The instrument operating temperature was measured at 15 degrees cooler than anticipated.

2.3 Calibration Maneuver

Salomonson suggested that, in his opinion, three things must happen or exist regarding the calibration maneuver by the end of April. First, MCST, et al., must ensure that the calculations calling for the space maneuver (deep space look) are reviewed and are completely correct. Second, it must be true that all AM-1 instrument teams are in agreement as to the importance of the calibration maneuver, or at least firmly convinced that it will not harm their instrument. Third, it must be clear when the maneuver(s) should be done. He added parenthetically that for PM, it may be, if a required maneuver can be performed early (i.e., prior to cool down), then some of the other PM instruments may have fewer problems agreeing to the maneuver. Salomonson again emphasized that the supporting scientific rationale and calculations must be solid to ensure both AM team and management cooperation (also true for PM) with the MODIS calibration maneuver.

2.4 Letter for Validation

Salomonson announced that David Starr had written an excellent letter describing actions needed or required for validation. Salomonson will forward it to those concerned. Esaias stated that after reading the letter, he plans to contact Starr for clarification on two specific areas of improvement for Ocean calibration.

2.5 Emergency Backup Plans

Salomonson stated that the EOSDIS emergency backup plans were discussed earlier that day at a GSFC Center management review. Al Diaz, the GSFC Deputy Director, would like to be sure that Yoram Kaufman is comfortable with the directions that the plans are going.

2.6 Costing

King reported that the GAO has been looking at uncosted carryover in the EOS algorithm budget, which includes MODIS. The GAO is investigating why different projects have had different degrees of costing success. King indicated that these considerations could result in a significant reduction to the Science Team Budget. Overall, the center management and the GSFC comptroller are working with NASA HQ to streamline money management and transfer procedures in order to reduce the stress associated with this problem.

Stuart announced that as of next week, contracts will be modified to monthly reporting so as to better monitor cost carryover.

2.7 May 1997 Science Team Meeting

Guenther expressed his desire to have Tom Pagano present thermal vacuum test data at the May Science Team meeting. However, this might conflict with consent-to-ship

preparations at SBRS. Salomonson asserted that delivery of the instrument takes priority over the presentation of thermal vacuum data. Weber added that ideally the consent-to-ship review should be completed just prior to the Science Team meeting, but he realizes that Guenther may have some additional tests that could push the review back somewhat. Guenther noted that the Science Team will be briefed on thermal vacuum results, whether or not Pagano is able to attend the meeting.

Esaias asked Guenther if polarization test data will be presented at the Science Team meeting. Guenther indicated that it would not; the only data available by that time is data that Tom Pagano processed using his templates. We are still a month or two away from actually being able to process data. Montgomery added that the archive system prevents pulling data out simultaneously to putting data in. Guenther confirmed for Esaias that, at the very least, the Science Team will be briefed as to how polarization data was analyzed and decisions were made.

Since the last Technical Team meeting (March 27), the only change made to the Science Team meeting agenda is movement of the Algorithm Developers Meeting (led by Joe Glassy) from 8:30 a.m. Thursday, May 15, to 8:30 a.m. Wednesday, May 14. The Algorithm Developers Meeting will run concurrently with the Closed Door Session.

2.8 Polarization Test

Weber stated that Howard Gordon has defined the necessary polarization criteria. Guenther indicated that Young and Pagano will process the polarization test data and compare it to Gordon's criteria, which he anticipates will be met, to decide whether the existing data set is adequate.

2.9 Metadata Workshop

Fleig announced that David Roy had attended the Metadata Workshop, where he learned that the EOSDIS project is in the process of deciding metadata search capabilities. Decisions about what can and cannot be searched will be made by the end of April. Fleig urged Esaias and King to check into this, to ensure that they get the search capabilities they will need in the future. For the benefit of outside users, Fleig has requested a standard MODIS 4-bit per pixel QA flag. Guenther asked Fleig if this applies to Level 1B products, and Fleig replied that he had not thought about that and will get back to Guenther later.

3.0 ACTION ITEMS

3.1 Action Items Carried Forward

1. *MCST*: address the issue of gain and saturation levels for MODIS channels 18, 26, and 27. Can the gains be changed so that L_{typical} is not saturated for a 100 percent reflectance target? [*MCST* is awaiting thermal vacuum test results from SBRS.]
2. *Howard Gordon*: define the criteria for success of the polarization tests done after partial blocking of the aperture.

Response: Gordon has supplied this information. This action item is closed.

3. *Robert Murphy:* Report on options for providing direct broadcast of MODIS data. [This report will be made in late April 1997 after the Direct Broadcast Meeting to be held next month.]

4. *Ed Masuoka:* Define the DAAC-SDST interactions; provide a one-page overview with bullets and/or diagrams.

5. *Ed Masuoka:* Provide an update on EDOS to the MODIS Team.