

MODIS Team Meeting Minutes

Minutes of the MODIS Team Meeting held on Tuesday July 12, 1994.

Action Items:

88. Obtain drawings from SBRC for CDR Actions 65 & 68. Assigned to Ken Anderson 5/19/94. Due 6/15/94
89. Investigate the availability and adaptability of surplus metal shipping containers for MODIS. Assigned to Bauernschub 6/20/94. Due 8/ 2/94.
90. Clarify what is required of SBRC to allow GSFC qualification of flight detectors. Assigned to Silva 6/30/94. Due 8/ 2/94
91. Clarify the round-robin BRDF measurement requirements. Assigned to Guenther. Due 8/16/94

The following items were distributed:

- 1) Weekly Status Report #146
- 2) SBRC Memos submission from week #138
- 3) Minutes of the previous team meeting

Attendees:

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|--------------------|--------------------|--------------------|
| ✓ Richard Weber | ✓ Bruce Guenther | ✓ Larissa Graziani |
| ✓ John Bauernschub | ✓ George Daelemans | ✓ Bob Martineau |
| ✓ Rosemary Vail | John Barker | ✓ Bob Silva |
| Lisa Shears | Patricia Weir | Robert Kiwak |
| ✓ Mike Roberto | Mitch Davis | ✓ Harvey Safren |
| ✓ Nelson Ferragut | Jack Ellis | ✓ Ed Knight |
| ✓ Gene Waluschka | Ken Anderson | ✓ Harry Montgomery |
| ✓ Bill Barnes | Rick Sabatino | Marvin Maxwell |
| Les Thompson | ✓ Cherie Congedo | Bill Mocarsky |
| | | Rick Mills |

MODIS Team Technical Weekly July 15, 1994

General

Travel orders need to be submitted now for the next QMR. The QMR for the last quarter of FY-94 will be held at SBRC on September 13 and 14. GSFC is considering a format which would include a few hours of presentation on September 13 followed by interaction with our counterparts at SBRC in the afternoon and following morning. There would then be an action item/wrap-up during the afternoon of September 14. Topics in your area which you would like covered during this time period should be submitted to Ken Anderson by July 22.

A Martin Marietta Interface Meeting is scheduled for September 15 at SBRC. The focus of the meeting will be Spacecraft Interface Simulator testing.

Comments from our technical team on the quarterly management review and the splinter meetings held at the end of June have been included in a memo dated July 15.

Calibration and Systems Telecon

The bi-weekly telecon was held on July 11. Participants included Bill Barnes, Harry Montgomery, Ed Knight, Neil Therrien, Jim Young, and Mike Roberto.

One important topic brought up by Bill Barnes was the registration of the 250, 500, and 1000 meter bands. At this point, there are differences of opinion on whether sampling of the 250 and 500 meter bands should be delayed. Then, based on the 50 % response points, two 250 meter band samples would fit inside one 1000 meter band sample in the scan direction; and two 250 meter band samples would fit inside one 500 meter band sample. At this time, we are nearly certain the sampling of the higher spatial resolution bands are not delayed. However, this means that three samples of a 500 meter band with the first sample scaled by a factor of 1, the second sample scaled by a factor of 2, and the third sample scaled by a factor of 1 will exactly duplicate the sampling of a 1000 meter band. Appropriate scaling of 250 meter samples will exactly duplicate a 500 meter or 1000 meter sample.

Harry Montgomery discussed a possible separate task under the existing contract. If this task is approved, SBRC would:

- 1) support software on our Test Analysis Controller (TAC).
- 2) review algorithms of on board calibrators.

Ed Knight discussed the following:

- 1) Ed is interested in the secondary mirror Bi-directional Scattering Distribution Function (BSDF) measurements. Terry Ferguson has written a memo on analysis based on BSDF measurements, dated June 29, Q04065. There is also a memo on BSDF measurements on MODIS secondary mirror witness samples dated June 27.
- 2) What is the scope of Terry Ferguson's stray light studies? a couple of concerns are scattering around the solar diffuser door and around the hole in the mainframe to get to the solar diffuser.
- 3) NIR registration looks good. One task is to look at the "out liers". These may be measurement errors.
- 4) GSFC would like dichroic #3 transmission data.
- 5) Is charge subtraction noisy or well controlled? SBRC will find out this week. They have preliminary SWIR data from the radiant cooler which has been cooled down.

Neil is using a SWIR band to do most of the focusing and alignment. One concern with charge subtraction is that if we take off too much signal, the Line Spread Function (LSF) may be narrower than it should be. Then the MTF may be wrong.

Jim Young mentioned the following:

- 1) The MODIS Ground Based Calibrator (MGBC) is officially dead. SBRC is doing an orderly shutdown for documentation purposes.
- 2) In the integration of the NIR focal plane, a spurious response has been seen between bands 1 and 2 which have striped filters (about 1/2% one way and 1% the other way, also between bands 7 and 6. May be an angle dependent phenomena. SBRC will also look closer at the IAC.

Contamination

Larissa Graziani mentioned the following:

- 1) Andy Webb will recommend that a filter be added to the LN2 back fill system.
- 2) In the clean room, a down flow system may be similar to a horizontal flow system. Location of personnel, type of floor, etc. are all factors. When loading the MODIS test chamber, the open door is a drawback to good horizontal flow.

Quality Assurance

Bob Silva mentioned that one vibration fixture still needs to be machined before the Florida vibration test of the mainframe.

Spectra is building the printed circuit boards for MODIS. Spectra is located in Gaithersburg.

Thermal

George Daelemans mentioned SBRC is doing ambient infrared testing on the electronic boards to look at temperature distributions.

Mechanical

At this time Martin Marietta and GSFC believe the MODIS scan mirror imbalance specification of 0.3 kg mm is valid. This spec is difficult to meet because of the difficulty in measuring the imbalance.

Nelson Ferragut will look into how to measure the imbalance of MODIS scan mirror. Some of the concerns involve possible damage to the bearings if the mirror is run at high speed to measure the imbalance and possible risks to mirror cleanliness and the mirror surface finish from making the measurements. Nelson will report back in one month.

Jim Mayor has completed an analysis of the effects of cool down on the radiative cooler shield. Cherie Congedo is preparing a cover memo for this analysis.

Focal Planes

Bob Martineau mentioned that SBRC detector division has received the QMR reviews from Bob and from Les Thompson.

SBRC will hybridize three S/MWIR SCAs without doing low background cold probe testing on the detectors. The detectors for these have no more than two outages per focal plane.

Four more S/MWIR SCAs will then be hybridized after low background cold probe testing has been done for the associated detectors. Two of these SCAs have no outages and two have more than two outages.

One LWIR SCA is being kitted and will be available by the end of the week. Three other LWIR SCAs had indium bumps which were too low.

The prime candidate PC detector array is on the motherboard and three candidate backup PC arrays are in test. One of these backup arrays is expected to be ready by August 4.

SBRC now has the cables required for the PFM FPAs. There is one spare LWIR and one spare non LWIR pedestal/cable assembly.

Calibration Management Plan Meeting

A meeting on the Calibration Management Plan was held on July 13. Attendees included Bruce Guenther, Harry Montgomery, Ed Knight, Peter Abel, Tim Zukowski, and Mike Roberto. A draft write-up on comments on the document has been prepared by Ed Knight.

Spacecraft Accomodation Meeting

This meeting was held on Friday, July 15. The phone conference included Tom Pagano, John Mehrten, Claire Wilda, Ray Taylor, Dick Weber, Cid Jones, Joe Bolek, and Mike Roberto.

Tom mentioned that SBRC will meet the specification of balancing the scan mirror to 0.3 kg mm. GSFC will independently look into the requirement and how to safely balance the scan mirror.

Another issue is the scan mirror thermal field of view. This may intersect the ASTER TIR structure. George Daelemans is looking into this.

Mike Roberto July 18, 1994