

MODIS sensor Working Group (MsWG) Summary

Attendance: Bill Barnes, Bob Barnes, Vincent Chiang, Roger Drake, Wayne Esaias, Bob Evans, Timothy Gubbels, Bruce Guenther, Shaida Johnston, Gerhard Meister, Chris Moeller, Junqiang Sun, Gary Toller, Jack Xiong, Eric Vermote, Zhengming Wan

Scheduled Items

Item 1 Instrument Status

Terra SD door opened on July 2, 2003.

SD Calibration performed with SD screen in place

Calibration Results Review

New strategy for LUTs delivery

Item 2 L1B and LUTs Related Issues

JX) After much discussion, we opened the SD door. The ocean bands look good. We have completed 4 days of continuous sampling. The data show interesting structures, including something resembling diurnal cycles. The variance we see ranges from $\pm 0.5\%$ to $\pm 0.2\%$ peak to peak. Ocean color bands: B8, B9 are less than $.2\%$, B15, 16 $\pm 0.4\%$. We have reviewed all old continuous cal data.

EV) We should update m1 LUT ASAP

BB) I don't understand the note of day 2002182 on the plots.

JX) The label should be 2003182 not 2002182 on the plots

JX) Yes. Notice that band 1 has high SNR. We need a new vignetting function - pinhole effect.

WE) Why is B7 so flat?

BB) It looks like a daily cycle

JX) We had prelaunch numbers. The temperature variance should not effect it over $\pm 0.2\%$

EV) You need to replot

RD) Could the cycles correspond to daily empemeris uploads?

JX) We need to study the numbers Note that B1, B2 and B17, B18 have similar patterns.

JX) We will study the geolocation and ephemeris. We do not know the exact cause.

RD) Did the earlier continuous collects show these effects?

JX) Yes. They are common for Terra and Aqua. They have some oscillations. The Aqua collect was good.

RD) For the land bands, compare the Terra and Aqua datasets.

JX) We are trying to lower the variance

WE) That does not answer Aqua MODIS

BB) This is a good dataset

BobB) We need this in a spreadsheet

WE) On the B13 data, it is out of family. It's going down over time.

JX) This may be an electronic gain change.

RD) B13 and B14 should be the same, since they share common electronics.

JX) The preamps differ

BB) Could the filter change or shift?

JX) We have done wavelength shift test (SRCA), we can go back and look more on B13 gain.

JX) I suggest averaging using the first daily cycle in the first week's data for m1 update

WE) Do a 24 hour average and compare it to other averages.

JX) We like to increase the SRCA frequency an additional 10 watts from monthly to every 2 weeks, and the SDSM weekly
RD) After you do a full SRCA radiometric, wait a period until cool down, then do a 10 watt later to prevent thermal effects in SRCA. Use the same lamp each time.
WE) Question on SDSM. If this pattern is caused by the vignetting on SD, can it be replicated with SDSM? The SDSM should be done each orbit.
RD) This has implications for SDSM lifetime.
WE) This makes the SD measurement suspect
BB) This would have big implications and would have to be run up to NASA HQ.
WE) I still maintain that you must do this, independent of how challenging the politics are.
BB) You need to look at the error propagation, since you are using fitted m1
JX) Forward processing is always using fitted
WE) Just do it 3 times.
RD) No, everything that we do that deviates from the ops plan must be reviewed

Around the Table

RD) Lecomski is continuing thermal modelling. We are getting data from Chad. Aqua SD cal frequency should be moved from 1 week to 2 weeks.
CM) Based on ER2 underflight, Aqua is performing well. We see a warm bias Terra/Aqua B35, B36. About 2°K diff for Terra, 1°K diff for Aqua. This information will go into the SPIE paper.
ZW) The field campaign went well
BB) WE and I have been speaking with a reporter from Space News on science implications of the screen.
JX) Next MsWg will be cancelled because of IGARSS.