

August 27, 2003

MODIS sensor Working Group (MsWG) Summary

Attendance: Bill Barnes, Bob Barnes, Stuart Biggar, Vincent Chiang, Roger Drake, Gene Eplee, Wayne Esaias, Eddie Kearns, Gerhard Meister, Chris Moeller, Vince Salomonson, Junqiang Sun, Gary Toller, Jack Xiong, Zhengming Wan, Joe Esposito

Scheduled Items

Note: New Dial-in Numbers

Item 1 Instrument Status

JX) Both Terra and Aqua are working well.
Terra has had three inclination adjustments: July 29, July 31, and August 6, and a drag-boost on July 22.
The Aqua inclination adjustment setup test was performed and an adjustment is scheduled for October.

Calibration Frequency:

SD: 1 per 2 weeks with Terra and Aqua on alternating weeks (one calibration taken each week for either Terra or Aqua).

SRCA: Radiometric - Terra once per 2 weeks matching with the SD calibration

Aqua once per month.

Spatial - Terra and Aqua once per 2 months

Spectral - Terra and Aqua once per 3 months

BB: Continuously each scan with BB warm up/cool down once per 3 months

Ecal: Once per 3 months

Item 2 Data Reprocess Issues - Aqua Radiometric Calibration Status

RSB (SD)

JX) m_1 trending over 1 year – synopsis of general discussion

Meeting plots were described by Jack

MS ratio plots show that the bands trend is constant after very early post-launch degradation however band 8 is offset from other bands by ~0.2%

Changes between safe holds and after 2002221 noted – since between 2002221-2002226

SDD/SDS remained open due to command dropout possible MS degradation occurred – this explanation not accepted by all but no explanation for it is obvious.

Several jumps in the trends were noted after days 220 and 450. The jumps are caused by angular rotation in PGE03 that are introduced to improve the geo-location product. The rotations cause offsets in the SD-sun angles that produce errors in the m_1 correction factors/functions [e.g. $\cos(_SD)$; $BRF(_SD_SD)$]. The errors cause small offsets in the m_1 factors. This will be corrected in PGE03 during the next upgrade (reprocessing).

Ocean team trending results for B03, B09, B10 shows similar structure to the m_1 trend. B12 show more structure than B4 possibly indicating a vignetting function effect. B2 and B16 don't show the same structure. In addition, B13-14 have small trending changes but the slope is in the wrong direction.

Use the moon to check the SD angle offsets on 220 and 450 – this can't be done presently, as we don't have the correct libration from Kieffer. We approximate by using the Terra libration while waiting for Kieffer's results.

There is a pronounced drop in the last m_1 data point relative to the trend. We will wait for the next calibration to check if it is real. No PGE03 rotation changes have been made near the time of this calibration.

TEB (BB)

JX) Scan by Scan calibration is mostly stable. There was a jump in B23 and B32 after the dropout. More TEB will be presented at the STM.

Around the Table

Participant: Jack Xiong – MCST-SeaWifs meeting on 2003-09-03. MCST-Oceans meeting on 2003-09-15; the main topic will be Aqua reprocessing.

Participant: Stuart Biggar – Will do calibrations next Sunday and Tuesday.

Participant: Vince Salomonson – There are concerns on whether to switch to continuous SDD open/SDS closed or to keep the current SD calibration method on Aqua.

RD) Results from analysis of PFM SDS opening failure – still at a loss to explain the failure.

There is no information to make a decision on FM1.

Pros to make change (Failsafe): The failure is not in the motor but is in the mechanism, disconnecting the motor and relying on springs (failsafe) would not work. The screen or possibly the door could fail at any point in the opening/closing phase and possibly prevent all future calibrations. There were no indications that the failure would occur and probably would not be on Aqua.

Cons against change: The quality science product for the land group would be diminished due to the lowered quality of the SD calibrations. Science quality may outweigh the danger of failure. This should be discussed (possibly at STM if not sooner).

Participant: Chris Moeller – We looked at images using the DSM corrected RVS. The first look at the thermal bands is encouraging, X-track asymmetry is reduced. Correction in affected Terra bands caused a decrease in the Terra – Aqua difference. Change in B5-B26 correction will be examined to decide if it will be loaded into Terra L1B.

Participant: Eddie Kearns – Will work on the impact of thermal variation on the trending response.

RD) Aqua VIS/NIR responsivity variation on T_{focal} 0.02%/°K for high gain bands. For low gain bands T_{focal} 0.05%/°K. Will fax this information to MCST.

JX) T within 0.5% SWIR OOB correction is small

Participant: Bob Barnes – We received the Terra m_1 's from MCST. Are Aqua's m_1 's ready? Can MCST send them to us?

JX) We can send them to you, be aware of the caveat.

Next Meeting 2003-09-10