

**ACTION ITEMS FROM CALIBRATION GROUP MEETING
HELD ON May 2, 1995**

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**Greenbelt Marriott Hotel
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PREVIOUS ACTION ITEMS THAT ARE STILL OPEN

Note: the numbers in this section refer to AIs from the Fall 1994 MODIS Science Team Meeting

1. A write-up is required from Hughes Electro Optical Systems describing its model that predicts an emissivity of the blackbody of 0.9997 without crazing and 0.9994 with crazing.

Warm out-of-field target effects on the on-board blackbody calibration source need to be checked by analysis.

Action: MCST by next Science Team meeting.

2. Quantify the stray light effect introduced by the filter in the along track (along slit) direction in the Scattering Measurement Assembly. SBRC to displace the slit in the track direction during PFM testing.

Action: Weber

3. Determine why the MODIS Sensitivity Analysis Program model is not handling earth-shine effects on the on-board blackbody.

Action: Weber by next Science Team Meeting

6. The design of the attenuator screen for the solar diffuser has been satisfactorily completed. A sub-system test of the screen/diffuser without the solar diffuser stability monitor is not worth pursuing.

Action: See new AI 44

8. Consider if there is any light level at which the silicon photodiode detector on the secondary transfer mirror of the SRCA can be used for radiometric monitoring. How stable is the detector in the absence of temperature control?

Action: MCST by next Science Team meeting.

10. Gather all information on the effects of using an unfocused reticle in the spatial registration mode of the SRCA.

Action: MCST to clarify.

15. How will the SRCA transfer an absolute radiometric scale to orbit to calibrate the solar diffuser?

Action: ATBD'95 to resolve this question. Also see new AI 44.

NEW ACTION ITEMS

44. There is concern that the MODIS requirement for 2% calibration uncertainty with respect to the sun will not be met. The present plan is to transfer the NIST-traceable preflight calibration, via the SRCA, to the solar diffuser on orbit. As this preflight calibration is not required to be less than 5% uncertainty, the transfer of this to the diffuser will not provide the required accuracy. A possible improvement may be achieved by the use of preflight solar-radiation-based calibration -- of the diffuser, attenuating screen and solar-diffuser stability monitor, although the use of the total system is preferred.

Action: Slater to send Weber a brief description of the calibration procedure. Weber to implement.

45. The ghosting model work has been completed but there are several issues related to the 'transient response' spec that have not yet been fully evaluated: diffraction, near-field stray light, detector cross-talk, etc. Would like to know the relative magnitude of these quantities.

Action: MCST by the next Science Team meeting.

46. Regarding the use of the moon and planets for stray light measurement: determine how feasible it is to measure stray light at the 0.1% level with these weak sources before proceeding further. Would it be better to use the SRCA for MTF determination than natural objects?

Action: MCST.

47. Related to the above AI, what is the pointing stability of MODIS when observing the moon or planets?

Action: Weber/Scolese to provide information on pointing stability for a one or two minute period.

48. EM test data indicate that different detectors in the same band (e.g. band 30) show considerable differences (up to 2%) between themselves as a function of scan angle. The change of one detector across the scan is 10%. These variations complicate the calibration greatly.

Action: MCST needs to understand this problem at the EM test review.

49. Need to investigate if an area inside the scan cavity can be used as a second on-board black-body. This is to help with the characterization of the effect of the variation of the angle of incidence on the reflectance of the scan mirror. Lincoln Lab measurements of SiO_x and contamination effects can give rise to significant changes of calibration with scan angle (see 4 above). Can the use of an area within the scan cavity be used to check the scan angle effect?

Action: MCST by next Science Team meeting.

AIs FROM THE IR ROUND-TABLE

50. Need scans above the horizon to check for determining scan angle effects.

Action: MCST

51. What is the sensitivity to polarization in the IR?

Action: Jim Smith to find out what has been published regarding surface and atmospheric IR polarization.

52. Supply an early draft of the Level 1-B calibration algorithm to the Science Team.

Action: MCST