AGENDA

MODIS SCIENCE TEAM MEETING

October 27-29, 1992; Santa Barbara, CA

Tuesday, Oct. 27:

0800: Registration
0830: Welcome & MODIS Overview----------V. Salomonson
0850: Headquarters' Perspective ----------G. Asrar, A. Janetos
0930: EOS Project Status ---------- M. King
1000: BREAK
1015: MODIS Instrument Management Summary----------R. Weber
1030: SBRC Perspective----------Aram Mika
1100: PDR Response/Questions----------SBRC Rep.
1200: LUNCH
1300 - 1730: Descope Discussions ---------- V. Salomonson
(These discussions will center on the instrument and product descopes.)
1730: CLOSE DAY 1 PLENARY
1930 - 2200: Discipline Group Meetings (optional)

Wednesday, Oct. 28:

0800: MAST Report---------- L. Stuart
0830: MCST Report and Algorithm Status ---------- J. Barker
0945: BREAK
1000: SDST Status Report ---------- A. Fleig
1100: Peer Review and Interdisciplinary Interactions ---------- V. Salomonson
(Merging IDS investigators and other Team leaders w/MODIS Team.)
1200: LUNCH
1300 - 1730: Discipline Group Meetings ----------All Afternoon
Groups meet in assigned conference areas. Discussions should center on Descope/Instrument and Descope/Products.
1800: SOCIAL - Catered
1930 - 2200: Discipline Group Meetings (optional)

Thursday, Oct. 29:

0800 - 1200: Discipline Group Meetings (continued) ----------All Morning
Groups meet in assigned conference areas. Discussions should center on Peer Review/Future Meetings and Interdisciplinary Interaction.
1200: LUNCH
1300: Plenary Discussion — Peer Review and Future Meetings ------- Panel of
1345: Plenary Discussion — Interdisciplinary Interaction---------- Team Leader
1430: Plenary Discussion — Instrument Descope ---------- and
1515: BREAK Discipline
1530: Plenary Discussion — Product Descope---------- Leaders
1700: ADJOURN SCIENCE TEAM MEETING

MEETING OBJECTIVES
(in Priority Order)

- Review MODIS instrument descope plans and assess the impact on science. Determine the implications for your discipline area.

- Review the data product list, form priority groups, make substitutions to optimize the at-launch selection, and carefully justify any additions.

- Complete and approve an algorithm peer review plan. Specifically, schedule peer review. Recommend a format for future Plenary Meetings and suggest possible agenda items.

- Determine the appropriate level of interdisciplinary interaction and cooperation.

MCST MODIS Science Team Outline
at
MODIS Technical Team Meeting

from the
MCST (MODIS Characterization Support Team)

presented by
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1 October 1992
NASA/GSFC
Building 22/Room 271

MODIS Science Team Calibration Working Group

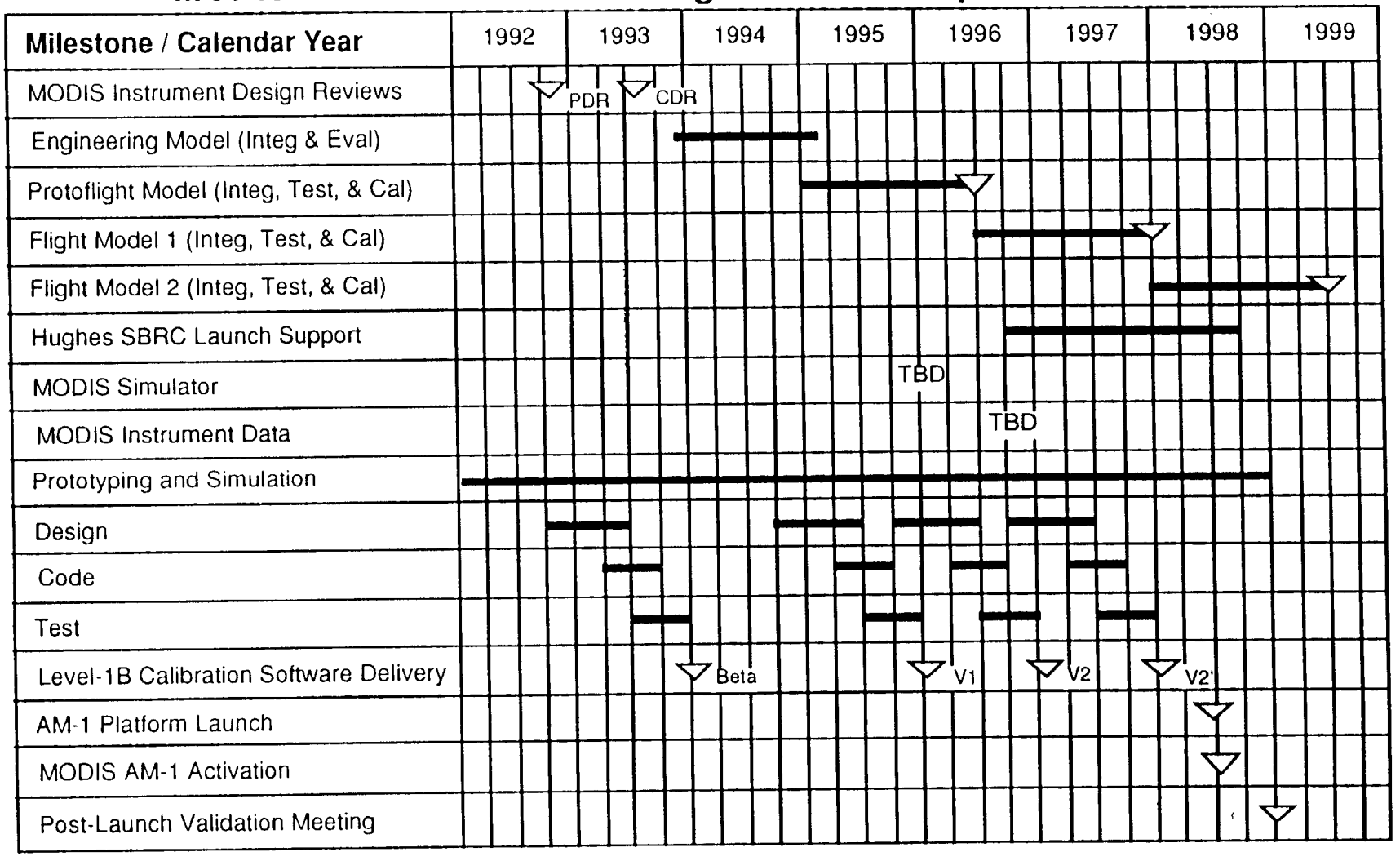
Holiday Inn
Goleta, CA

Monday, October 26, 1992

AGENDA

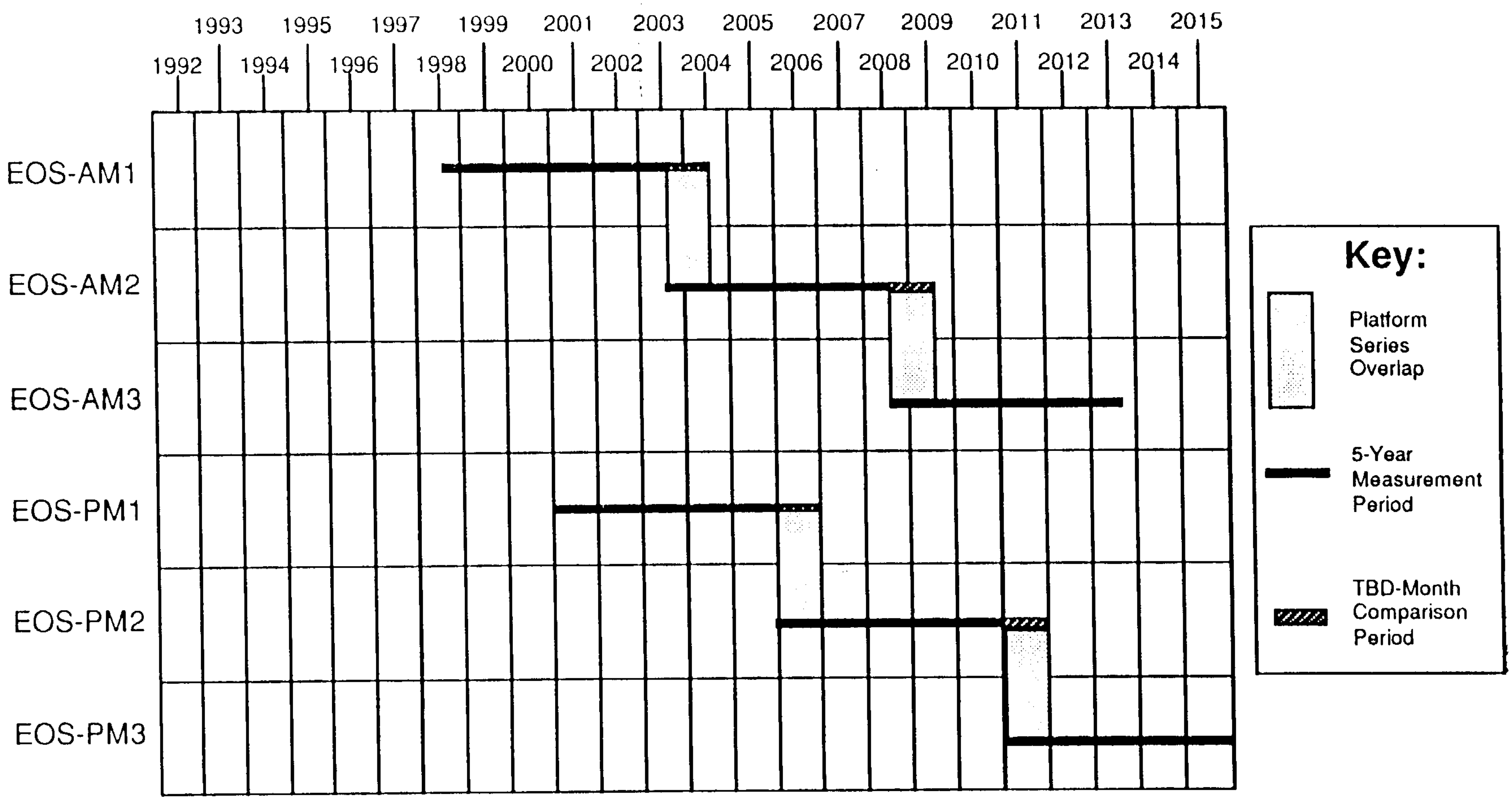
0815	Phil Slater/U. AZ	Introductions and Introductory Remarks Review Agendas/Objectives for Week
0830	John Barker/GSFC	MODIS Characterization Support Team (MCST) Report MODIS Mission Calibration Plan MODIS Calibration Methodology Internal Calibration Requirements (SRCA) Spectral Requirements Geometry Requirements MODIS/Radiometric Calibration Algorithm
1000	**BREAK**	
1015	Bill Barnes/GSFC	MODIS-Related SeaWiFS Calibration Up-Date
1030	Jim Young /SBRC	MODIS/Instrument Calibration Plan
1130	**LUNCH**	
1300	John Barker/GSFC	Calibration-Related MODIS De-Scope Options
	Jim Young/SBRC	Calibration-Impact of De-Scope Options
1430	**BREAK**	
1500	Stuart Bigger/U. AZ	MODIS Cross-Calibration
1515	Bruce Guenther/GSFC	EOS Calibration/Cross-Calibration Requirements/Plans
1600	Phil Slater/U. AZ	Calibration-Related Action Items/Schedules
1730	**ADJOURN**	

MODIS Level-1B Calibration Algorithm Development Schedule

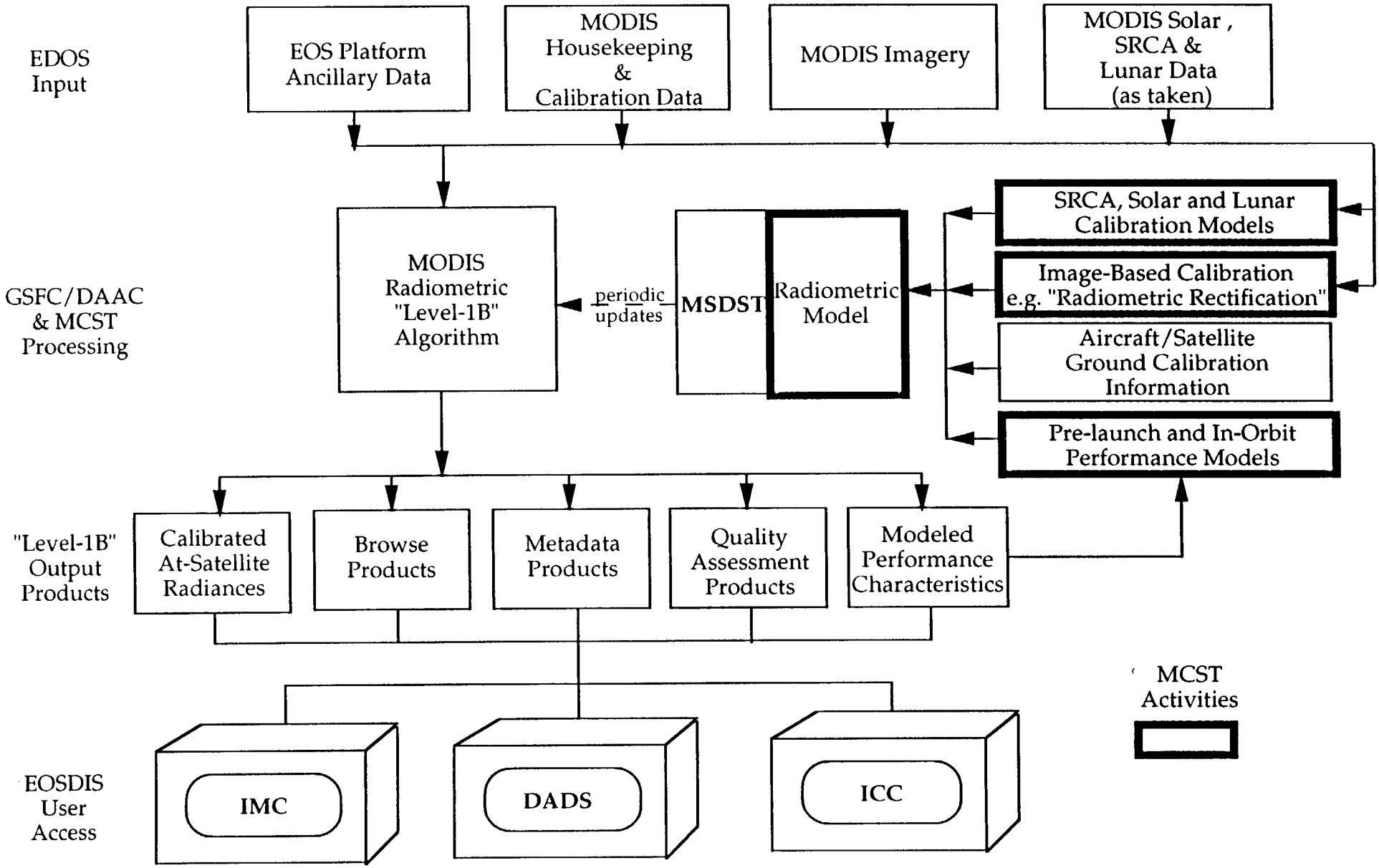


MODIS Calibration Algorithms
John L. Baker /NASA/GSFC/925/MCST (Modis Characterization Support Team

for MST meeting SBRC October, 1992
File: Schedule MODIS 11:00 9/17/92


1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
EOS-AM1
EOS-AM2
EOS-AM3
EOS-PM1
EOS-PM2
EOS-PM3
Key:
Platform Series Overlap
5-Year Measurement Period
TBD-Month Comparison Period

Illustrative Flow Diagram
MODIS "Level-1B"



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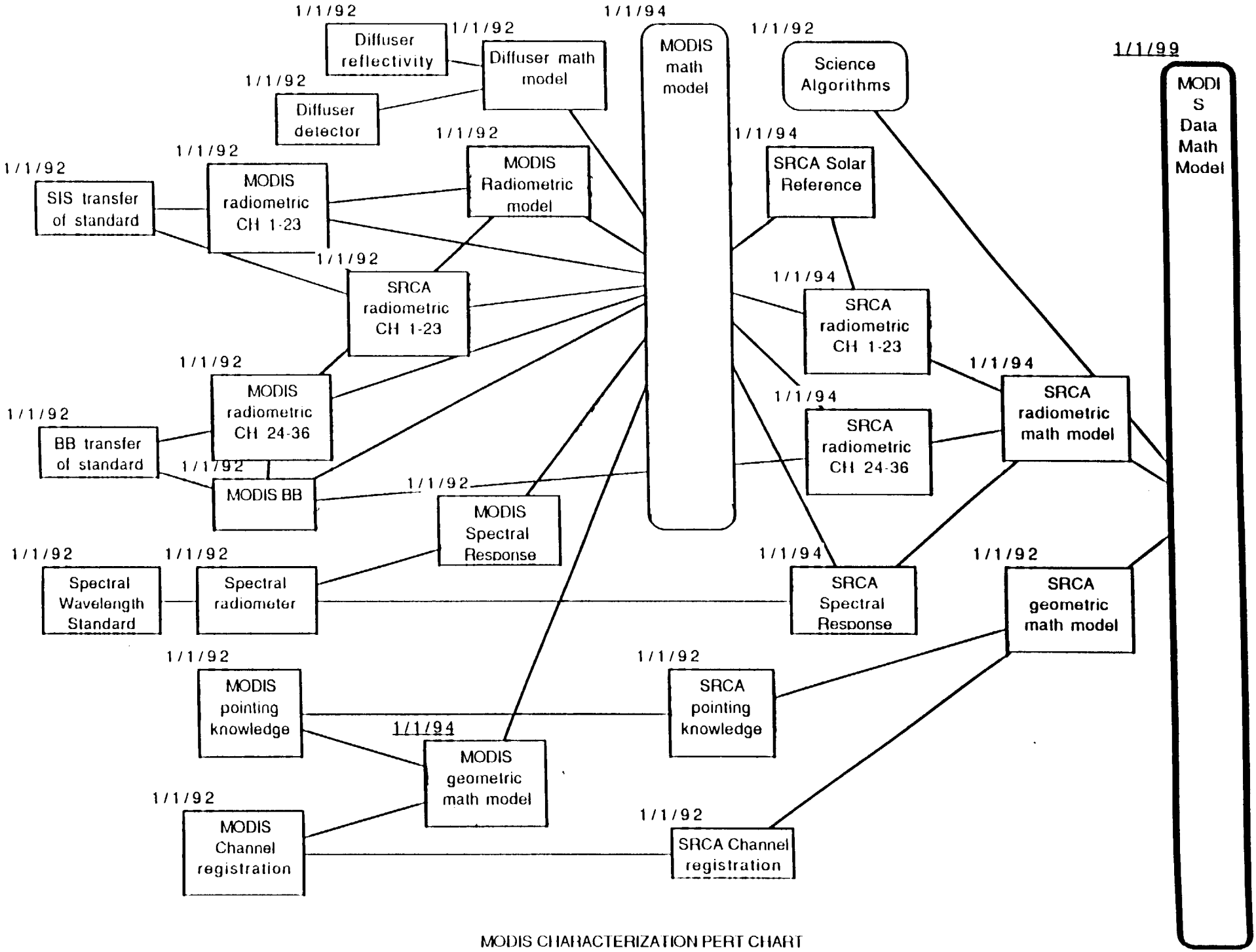


MODIS CHARACTERIZATION PERT CHART

MCST/FOS/ICC Technical Approach

- Develop Phase-B MCST/FOS/ICC Workstation Feasibility and Requirements Plans
- Develop Phase-C MCST/FOS/ICC Workstation Implementation Plan
- Conduct prototyping efforts with pre-launch real-time data
- Development and analysis of algebraic, statistical and pattern recognition performance evaluation algorithms and predictive models,
- Conduct prototyping efforts with simulated data
- Integrate radiometric and math models of Hughes/SBRC
- Maintain an isolated and secure MCST facility in immediate proximity to the MODIS ICC.

Key MCST Hardware Milestones

To Monitor MODIS-N Instrument-Level I & T

Ambient and thermal vacuum testing and calibration about 6 months before delivery from SBRC/HAC to GE

October 1994	Engineering Model
December 1995	Prototype Model for EOS-AM1 Observatory
June 1997	Flight 1 Model for EOS-PM1 Observatory
December 1998	Flight 2 Model for EOS-AM2 Observatory

To Monitor MODIS-N Spacecraft-Level I & T

June 1996	Prototype Model for EOS-AM1 Observatory
December 1997	Flight 1 Model for EOS-PM1 Observatory
June 1999	Flight 2 Model for EOS-AM2 Observatory

MCST/EOC Workstation Delivery

Hardware up-grades on 3 year centers

January 1995	Prototype Model
January 1998	Operational Model 1 for EOS-AM1 ICC
June 2001	Operational Model 2 for EOS-PM1 ICC

Key MCST Software Milestones

To Monitor MODIS-N Instrument-Level I & T

October 1992	Concept Development of Engineering Model
April 1993	Code Engineering Model Software
October 1993	Test Engineering Model Software
April 1994	Deliver Engineering Model Software
June 1995	Prototype Model for EOS-AM1 Observatory
January 1997	Flight 1 Model for EOS-PM1 Observatory
June 1998	Flight 2 Model for EOS-AM2 Observatory

To Monitor MODIS-N Spacecraft-Level I & T

June 1996	Prototype Model for EOS-AM1 Observatory
December 1997	Flight 1 Model for EOS-PM1 Observatory
June 1999	Flight 2 Model for EOS-AM2 Observatory

MCST/EOC Workstation Software Delivery

Software up-grades on 1 year centers

January 1995	Prototype Model
January 1998	Operational Model 1 for EOS-AM1 ICC
June 2001	Operational Model 2 for EOS-PM1 ICC

Key MCST Algorithm Milestones

MCST Algorithm Deliveries

October 1992	Peer Review of Algorithms
January 1993	Version 0 Algorithms to MSDST
January 1994	Version 0 Algorithms for MSDST Integration
January 1994	**ECS PDR**
June 1995	Version 0 Algorithms for MSDST Test and Delivery
June 1995	Version 1 Algorithms to MSDST
January 1996	Version 1 Algorithms for MSDST Integration
June 1996	Version 1 Algorithms for MSDST Test and Delivery
June 1996	**ECS Version 1 Delivery**
October 1996	Version 2 Algorithms to MSDST
April 1997	Version 2 Algorithms for MSDST Integration
June 1997	Version 2 Algorithms for MSDST Test and Delivery
June 1997	End-to-End Software Test
June 1997	**ECS Version 2 Delivery**
January 1998	Post-Launch Algorithm Development
June 1998	**Launch of EOS-AM Platform**

ORIGINAL MODIS/MCST CALIBRATION PRODUCTS

(Prior to TL Memo of 25 August, 1992)

Product No.	Product Name	Time	Comments
2338	Level 1B Radiance	AL	
2339	Level 1B Radiance	PL	
2392	Level 1B Radiance	AL	
2340	Level 1B Radiance	PL	
3656	Geometric Error	PL	
3657	Geometric Error	PL	
3645	Instrument Characteristics	AL	
3648	Instrument Model	AL	
3652	Irradiance Lunar	PL	
3651	Irradiance Solar	PL	
3654	Radiance Error	AL	
3646	Radiance, at-Satellite	AL	
3650	Radiance, Lunar Reference	PL	
3649	Radiance, Solar Diffuser	PL	
3655	Reflectance Error	AL	
3647	Reflectance Exoatmospheric	AL	
3653	Reflectance Lunar	PL	

ORIGINAL MODIS/MCST TEXTURE & MASKING UTILITY PRODUCTS

(Prior to TL Memo of 25 August, 1992)

Product No.	Product Name	Res.	Time	Comments
3658	Texture, MODIS Level-2		AL	
3659	Texture, MODIS Level-3		PL	
3660	Classification Masks Level-2		AL	At Launch Clouds/SnowLand/Water
3661	Classification Masks Level-2		PL	Post Launch Clouds/SnowLand/Water
2282	Cloud Masking Shadowing	.25km	AL	
2283	Cloud Masking Shadowing	.5km	AL	
2284	Cloud Masking Shadowing	1km	AL	
3641	Cloud Cover	.25km	AL	
3020	Snow Cover	10 km	AL	
3021	Snow Cover	1 km	AL	

Selected MODIS/MCST Texture & Masking Utility Products

Product No.	Product Name	Res.	Time	Comments
3641	Cloud Cover	.25km	AL	
3021	Snow Cover	1km	AL	

MODIS/MCST Texture and Masking Utility Products

ORIGINAL MODIS/MCST UTILITY PRODUCTS

*	Product No.	Discipline Group	Parameter :: Qualifier	Investigator	Time	Comments
N	3658	LAND	Texture::MODIS Level-2	Salomonson/Barker	AL	Utility Algorithm with Strahler
N	3659	LAND	Texture::MODIS Level-3	Salomonson/Barker	PL	Utility Algorithm with Strahler
N	3660	LAND	Classification::MODIS Masks Level-2	Salomonson/Barker	AL	Cloud/Snow/Land/Water Utility Mask with Hall
N	3661	LAND	Classification::MODIS Masks Level-3	Salomonson/Barker	PL	Cloud/Snow/Land/Water Utility Mask with Hall

SELECTED MODIS/MCST UTILITY PRODUCTS

Y	3641	LAND	Cloud Cover	Salomonson/Barker	AL	Texture/Cloud/Snow/Land/Water/ Glint/Terminator/Shadow Utility Mask
Y	3021	LAND	Snow Cover	Salomonson/Hall	AL	From Utility Mask with Barker

As carried in the EOS Science Data Product Database (Yun Chi Lu/936, July/92)

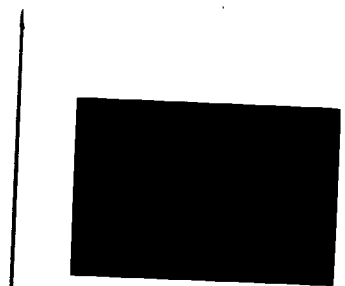
The question of whether there are unique EOS-AM, EOS-PM or combined EOS-AM/EOS-PM land data products has not been examined.

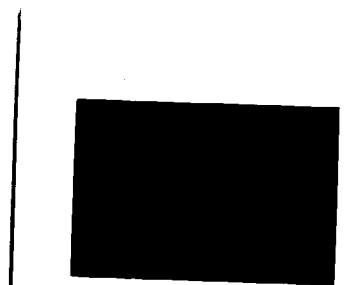
Presently, there is no current non-MODIS Product (e.g., MODIS Cloud Mask for MISR, CERES, or AIRS).

* Column indicates Red/Blue Team "selected" subset of EOS products (Aug/92).

A Possible 1.38-μm Channel For Remote Sensing of Cirrus Clouds From EOS/MODIS

Bo-Cai Gao and Yoram J. Kaufman





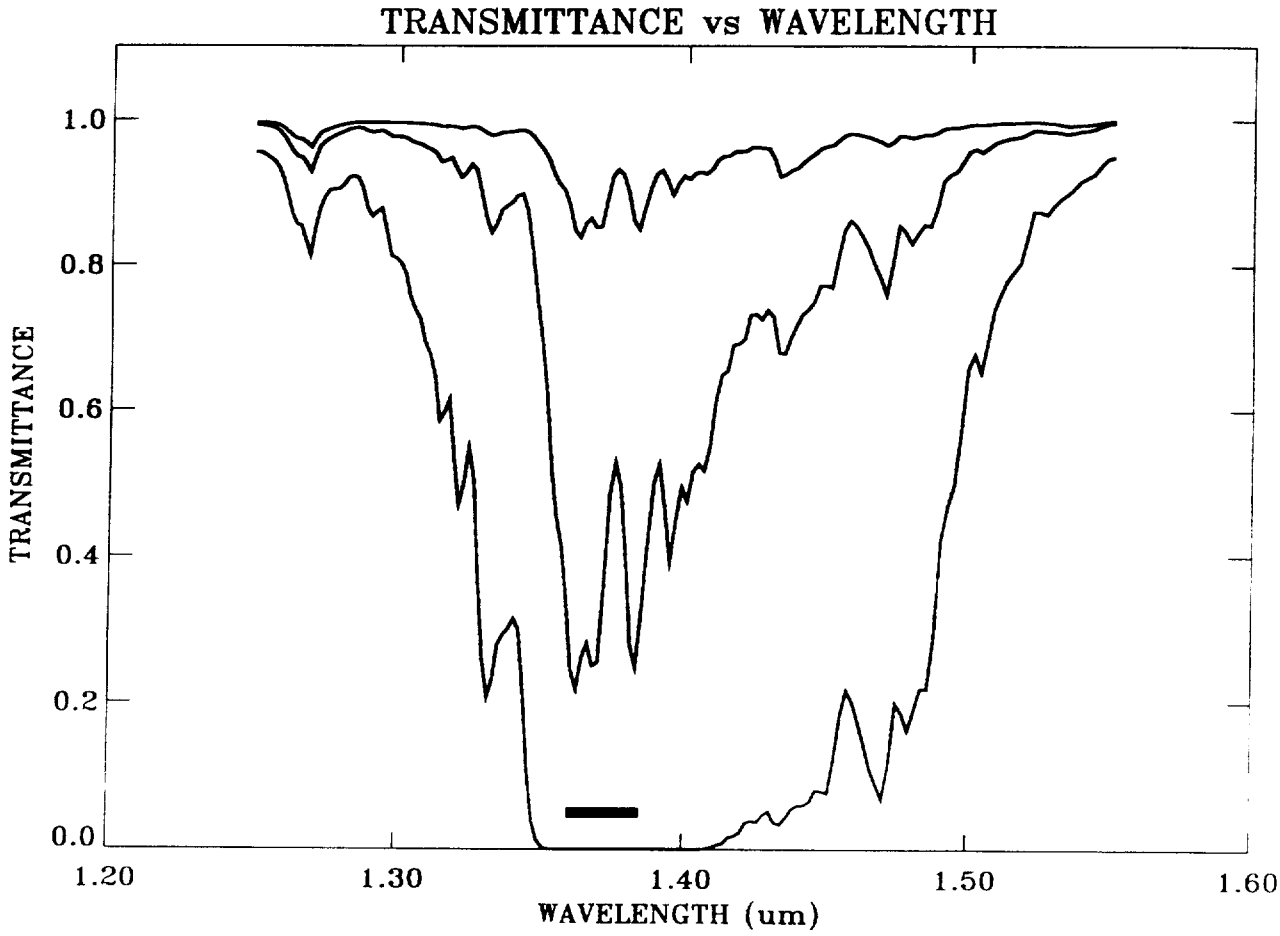
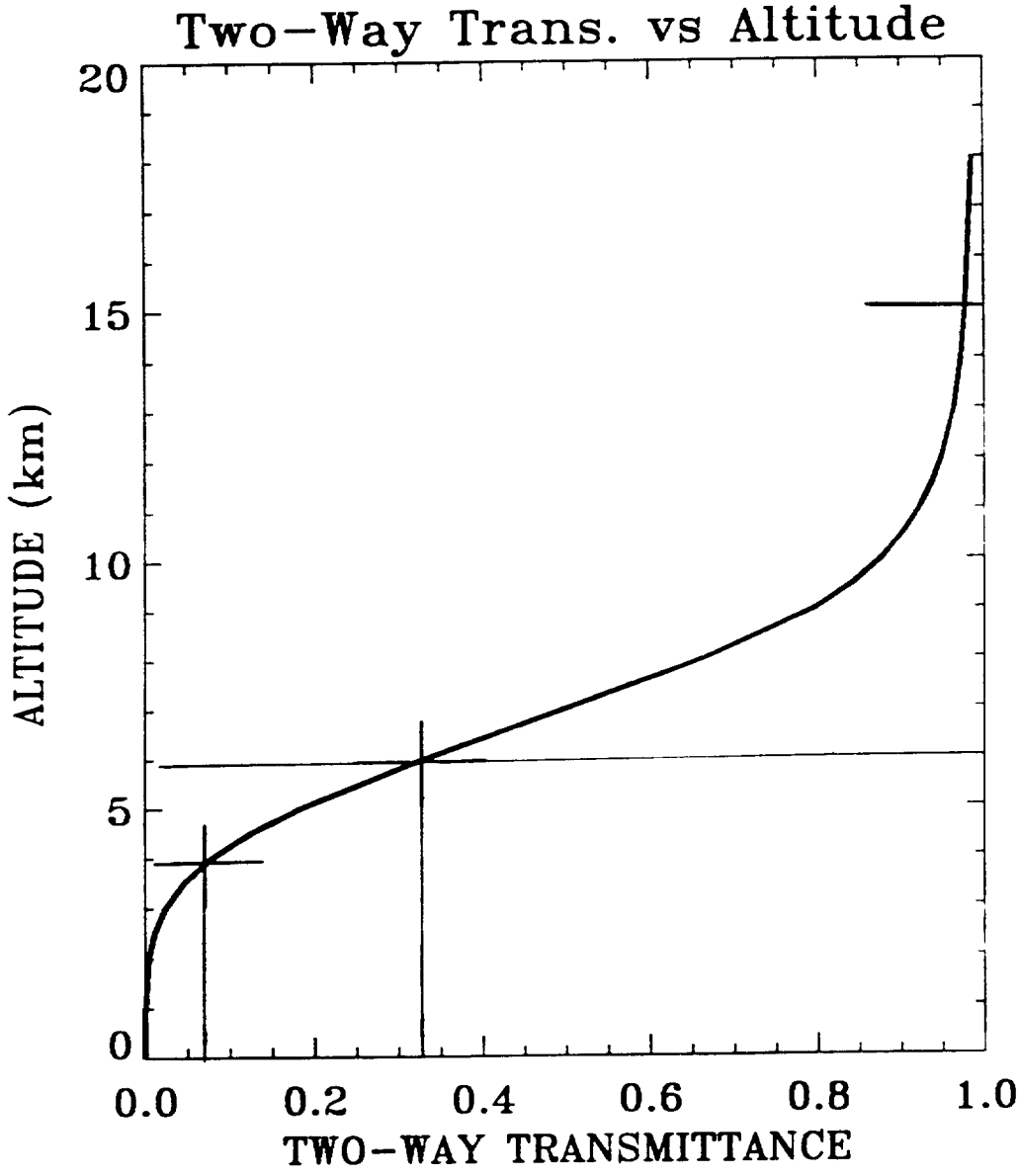

TRANSMITTANCE vs WAVELENGTH
TRANSMITTANCE
1.0
0.8
0.6
0.4
0.2
0.0
1.20
1.30
1.40
1.50
1.60
WAVELENGTH (um)

FIG. 2


Two-Way Trans. vs Altitude
20
15
10
5
0
ALTITUDE (km)
0.0
0.2
0.4
0.6
0.8
1.0
TWO-WAY TRANSMITTANCE

CONCLUSIONS - RECOMMENDATIONS

- The 1.38 μm ($\Delta\lambda$=50 nm) can sense thin cirrus clouds undetectable otherwise during the day.

- Very good separation between cirrus clouds and clouds under 6 km due to the strong water vapor absorption in the lower atmosphere.

- Recommend to replace the current MODIS Channel 23 (4.050 μm) with the 1.38 μm ($\Delta\lambda$=50 nm).

- M. King and P. Menzel already agreed with this recommendation.

- Need to check the technical aspects of this modification.