

ASTER - Enhanced TM

- o There is a clear need for high resolution data in support of MODIS-N product validation and algorithm testing post-launch. (HIRIS-ASTER) - continuity?
 - The enhanced TM will offer new research capability; however is a known quantity and would be a useful operational 'high resolution' system.
 - ASTER has yet to be demonstrated and is primarily a research system with no track record.
- o Coverage - ETM Superior
- o Resolution - Comparable
- o Spectral
 - ASTER no Blue Band
 - ASTER low S/N in SWIR
- o Thermal
 - Maybe comparable if ETM goes to 4 Bands. 60 m pixel size. Otherwise ASTER superior.
- o Stereo
 - ETM has pointing capability. Stereo capability would be superior (spatial).
- o Calibration
 - Separate vendors for 3 focal planes - ASTER

ASTER has firm specs (little flexibility).

- Optimal Choice: ASTER w/10:30 TM formation flying.

Benefits of dual MODIS-N 1030 and 1330

Improved Coverage

- 1) Redundancy of data in case of sensor failure.
- 2) Shorter global coverage cycle (2 days, 1 sensor=4)
- 3) Higher daily probability of cloud-free coverage
- * 4) More cloud-free area at 1330 for high latitudes, coastlines, mountain valleys; fog burn-off

Diurnal Climatology

- 5) Better diurnal thermal inertia (0130-1330 and 2230-1030)
- 6) Better surface dew point temperatures (0130 better than 2230)
- * 7) Improved diurnal incoming radiation (2 daily cloud estimates, not 1)
- 8) Improved atmospheric sounding, mid-day PBL and aerosol optical thickness at 1330
- 9) Better vegetation stress defined at 1330 also better energy partitioning, Bowen ratio
- 10) Better fire activity mapping at 1330

*also with -T at 1330

MODIS LAND Plenary Issues:

- **Seattle Payload - MODIS T v. MISR**
 - **ASTER / Enhanced TM**
 - **am and pm MODIS N**
- **Response to Spec. Questionnaire**
 1. **Band to Band - Require Vis/ N IR /SWIR all @ .1**
 - **Can tolerate LWIR @ .2**
 2. **Can change 300 to 335 but would like linear temp not radiance**
 3. **Need Ch# 29 @ .05**
 4. **Can reduce Band 6 to 275 at Ltyp.**
- **However: we believe scene to scene registration to be a key issue and need to examine ways to improve the spec from 1 pixel at 500m to .2 of a pixel. The issue is complex involving instrument, platform and ground segments. The instrument / platform constraints need to be better documented for the land team and we need to start making comparisons of on board v. ground processing costs of fixing the problem of inadequate multitemporal misregistration. The team will continue to build the case for this critical requirement. We would like to see the project help in resolving this issue.**
 - e.g examine the possibility of improved pointing knowledge through MISR 240m data.
- **A topographic DEM is still a pre-launch requirement for MODIS N data correction. We would like some indication from EOS-DIS what their current plans are to meet the overall requirement for EOS and in particular for MODIS. We will continue to clarify our requirements.**

- **MODIS N simulation**
 - TM will be an important means of simulating MODIS N land data we would encourage MCST to raise the level activity in refining the simulation algorithm.
 - MAS continues to be of interest to the land group and we look forward to obtaining data in 1992 for the first evaluation of the instrument for land studies (Brazil 1992 ?).
- **General Comments to HQ and EOS project scientist.**
 - As currently planned there will be no polarisation instrument on EOS. This is a major gap in the R and D program. Polder on (ADEOS) should be given more attention in terms of consideration for future EOS platforms.
 - As currently planned the original idea of spectrometry as the basis for EOS land sensing will go with MODIS T.
- **There is a need for better DIS outreach.**
- **Continued interaction with the LP DAAC.**
- **Team reporting - we will try and come up with a minimum pain/time mechanism to get the necessary information in to the right hands.**
- **EMAIL is still a problem. We need a letter from the team leader to the project.**