

# *Project Science Office Update*

## Outline

- Reshaped Mission Profile
- NRC Report Recommendations
- MTPE NRA-95-03 Status
- MTPE Budget FY 95-96
- Status of FY 96 Congressional Action
- MTPE Budget Issues
- Congressional Players
- MTPE Future Direction Study
- Outstanding Issues



# *NRC Report Recommendations*

- Success in attacking the long-term scientific challenges of the USGCRP requires an adequate and stable level of funding that promotes management efficiencies and encourages rational resource allocation
- Further budgetary reductions or imposed constraints on technical options could require the elimination of key sensors, slips in schedule, loss of data continuity, and the elimination of advanced technology development that could enhance future research and lower costs
- Maintain a science-driven approach to observational and information management technology



# *NRC Report Recommendations*

- Implement the first group of EOS components without delay, including launching Chemistry-1 on schedule (December 2002) - focusing the tropospheric components of Chemistry-1 on the global distribution of ozone and its precursor gases
- Streamline the EOSDIS plans for data downlink (command and control of spacecraft and instruments) and level-0 and level-1B (calibrated, geolocated) data processing
- Reconfigure EOSDIS to transfer responsibility for product generation, publication, and user services to a competitively selected federation of partners from government, academia, and the private sector



# *NRC Report Recommendations*

- Expand *in situ* observations, process studies, and large-scale modeling activities - a direction that the EOS program has already begun to aggressively pursue



# MTPE NRA-95-03

## Cumulative totals as of Friday, November 3, 1995

- NRA downloads = 3656
- Voice mail requests = 187
- Letter and e-mail requests = 83
- Updates to mailing list thru home page form = 350
- Letters of intent = 497



# MTPE Future Direction Study

## Requirements

- *Perform a fast-track study for the MTPE program to identify and evaluate mission architecture options that include opportunities for technology infusion in advanced space system concepts*
- *Include determination of risk levels and life cycle costs for accomplishing the critical requirements of MTPE science in support of global change research*
- *Focus on mission architecture options which rely on technology infusion and commercial partnering*



# MTPE Future Direction Study

## Requirements

- *Identify:*
  - metrics associated with performance, cost, and risk
  - policy impacts and barriers
  - impacts to international and interagency agreements
- *Use as a baseline, the current MTPE program as defined by the recent EOS Reshape activities in support of the NAS/BSD review*



# *MTPE Future Direction Study*

## *Participants and Schedule*

- **Steering Committee: Kennel, Price, Harriss**
- **Study Team: Venneri and Vanek (co-chairs)**
  - Technology reps (unaffiliated with the EOS program) from HQ, GSFC, JPL, and SSC
  - Asrar and King (science interests)
  - NRO and IPO
- **Working group meets every Friday through early December**
- **Report to Goldin on December 20**





# MTPE Future Direction Study

## Motivations

- Rep. Robert Walker’s strongly-held belief that there is a viable commercial remote sensing market waiting in the wings. Venneri disagrees that this is *currently* the case; thinks that Walker’s vision isn’t feasible for at least five years.
- declining NASA budget coupled with need to do the RLV and wind tunnel programs



# *MTPE Future Direction Study*

## Guidelines

- Goldin doesn't want to see a “warmed over” EOSDIS; instead, he wants something revolutionary that saves big \$\$\$ and uses commercially available services to the maximum extent possible
- Clearly identify science needs distinct from commercial needs with a strong emphasis on calibration and intercomparison of data sets
- Do not redefine or challenge the 24 measurement sets; instead, develop new technology opportunities, i.e., spacecraft features, Ka-band transponders



# *MTPE Future Direction Study*

## Guidelines

- Include meetings with aerospace industry reps on instrument, spacecraft, and launch vehicle technology opportunities
- Establish a clear set of ground rules to be presented to the Steering Committee to focus the scope of the study



# *MTPE Future Direction Study*

## *Technology recommendations so far*

- Getting level-0 data to the ground followed by ground processing is preferable and cheaper than on-board processing
- It is advisable, where possible, to share redundancy in electronics among different instruments



## *Some Outstanding Issues*

- Lack of recognition that MTPE/EOS requirements emphasize calibration, validation, and continuity, unlike other space-based remote sensing programs
- EOS PM and NPOESS integration
- Emphasis on new technology infusion does not take into account the typically conservative long-term observation approach preferred by most scientists
- Algorithm development is expensive; considerable cost and time penalties are incurred with every modification, i.e., going to a hyperspectral MODIS

