CCSP, EOS, NPP, NPOESS, CERES Status

Climate Change Science Plan (CCSP)

- First Draft in November, open meeting in December 02
- Academy review released recently: science ok, but not a strategy plan: too little detail on how to fix the problems.
- Climate Data Records a key focus for all agencies
  - missing elements, how to manage across agencies/international
- This is CERES focus within EOS/NPOESS
- No existing rigorous Climate Observing System: currently a loose collection of weather and research data.
- Need plan for a "Climate Observing System" .....
- Rewrites of CCSP document by late June
- Earth Observation Summit in late July

NPOESS Status

- Only rumors at this point:
  - Cost cuts/over-runs causing replanning exercise
  - Earth Radiation Budget instrument build delayed 2 years.
  - ERB instrument eliminated for cost savings? TBD.
    - weather is priority 1
    - climate is priority 2: but still important.
  - Gaps in solar constant, ocean altimetry, radiation budget remain likely between EOS and NPOESS.

NPP Status

- NPP spacecraft vendor selected summer, 02, Launch in 07
- Spare CERES instrument and OMPS (ozone measuring suite) considered for addition to NPP:
  - OMPS added
  - Space for CERES on the spacecraft will be designed in, and interfaces (electrical/power/mechanical) designed in.
  - NASA has not yet identified funds to calibrate, integrate, and do data processing for CERES on NPP.
  - Waiting to hear.....
  - Hard decision probably not needed until next year
  - Aqua, Terra will not be de-orbited
  - Latest estimate of risk of a gap in broadband radiation budget data without CERES on NPP is 16 to 42% through 2012, range depends on GERB success, launch dates, and lifetimes.
  - CERES on NPP reduces gap risk to 6% through 2012.

NIST/NASA/NPOESS Satellite Climate Calibration Workshop: Md, Nov. 02

- Evaluate and document climate calibration accuracy and stability targets for most NPOESS IORD variables. Climate Data Records: CDRs not EDRs.
- Includes solar constant, radiation budget, clouds, aerosols, atmospheric variables, surface variables.
- No rigorous climate observing system yet defined.
- Report in draft form: 3 topics for each IORD satellite remote sensing variable:
  - *variable accuracy/stability requirements,*
  - *impacts on instrument accuracy/stability*
  - *impacts on future improvements needed in observation/calibration*

NIST/NASA/NPOESS Satellite Climate Calibration Workshop: Md, Nov. 02

- Radiation: greenhouse forcing is 0.6 Wm^{-2}/decade.
  - A cloud feedback of +/- 50% would change radiation by +/- 0.3 Wm^{-2}/decade.
  - 0.3 Wm^{-2} climate model is UKMO climate model annual tropical mean noise (specified SSTs): not much point going smaller than this.
  - 2-3 Wm^{-2} tropical mean decadal signal.
  - Use 0.3 Wm^{-2}/decade for cloud and radiation stability.
  - Accuracy factor of 5 to 10 less critical than stability for climate change
  - CERES has a chance at this but needs long time series and independent checks to verify over time. Suggests actual gain corrections required over time from on-board calibration should be less than 5 to 10 times stability requirement.
  - Imager visible channel (tau, cloud fraction): use lunar views to verify stability.
  - Lidar needed for stability in cloud fraction/height at 0.3 Wm^{-2} nadir sampling ok at zonal/global
  - Overlap critical for solar constant, radiation budget, cloud.

EOS Recompete: Good News: Its happening!

- EOS NRA science proposals due April 15 (630 submitted)
- EOS Instrument team leader and P.I. proposals due May 14 (CERES, AIRS, MISR, etc.
- Initial page limit 20 pages: finally got increased to 40.
- Current draft at 60 pages: trying parallel strategies to reduce technical content.
- Struggle for CERES is capturing our integration of 11 instruments on 7 spacecraft, 8-dimensional sampling, all with fixed algorithms and climate quality qc/validation.....all in 40 pages
- CERES is instrument light: but processing/algorithm heavy: inexpensive in total cost: but only when add in launch, spacecraft and instrument costs: CERES total is 4% of Earth Observing System: consistent with radiation budget as 1 of 24 climate measurement sets.
- Funding starts Dec 15, 2003.
- Funding for 3 years with option for 4th year for instrument teams.
- Special instrument proposal review panel

EOS Recompete, The Bad News: Possible $800K Shortfall in FY03 CERES Funding

- CERES spring 2002 planned budgets assumed HQ picked up science team funding for June 2003 and beyond: last year's planned start of new NRA funding.
- Delay in NRA so new NRA funding doesn't start until Dec 15, 2003.
- I assumed that HQ would provide the June 2003 to Dec 15, 2003 funding in the funding call in March 2003. This was evidently incorrect (still clarifying).
- Roughly an $800K issue for 6.5 months of June through Dec 15, 2003.
- In March, 2003 CERES put in for "over-guide" costs to cover this, but this was denied last Thursday by EOS project (except for $77K ECWMF data)
- Worked through CERES budgets again in detail: looks like at least a $630K problem covering the team through Dec 15, 2003 after all non-personnel cuts.
- Not clear if this was an error in my interpretation of the POP budget guidance: a project email indicated all EOS teams had this problem and should "slow down" work: but the only way to slow down this much half way through the year is to reduce staff. Waiting for guidance from EOS Project on reduced CERES FY03 overguide request.
- Hope to know outcome in 1 to 2 weeks. Stay tuned and check your budgets.