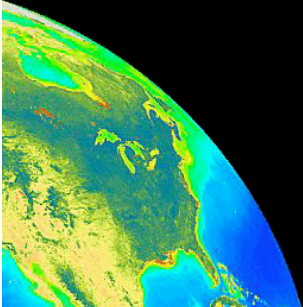


# MODIS Ocean Team Summary

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Chuck McClain

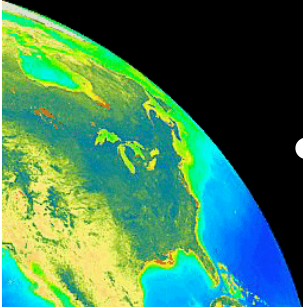
MODIS Oceans Science Team Meeting  
October 31-November 2, 2006



# Presentation & Discussion Topics

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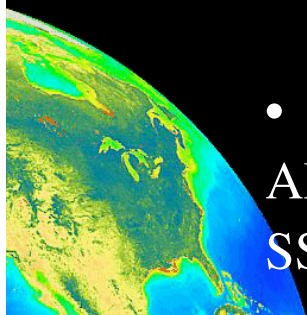
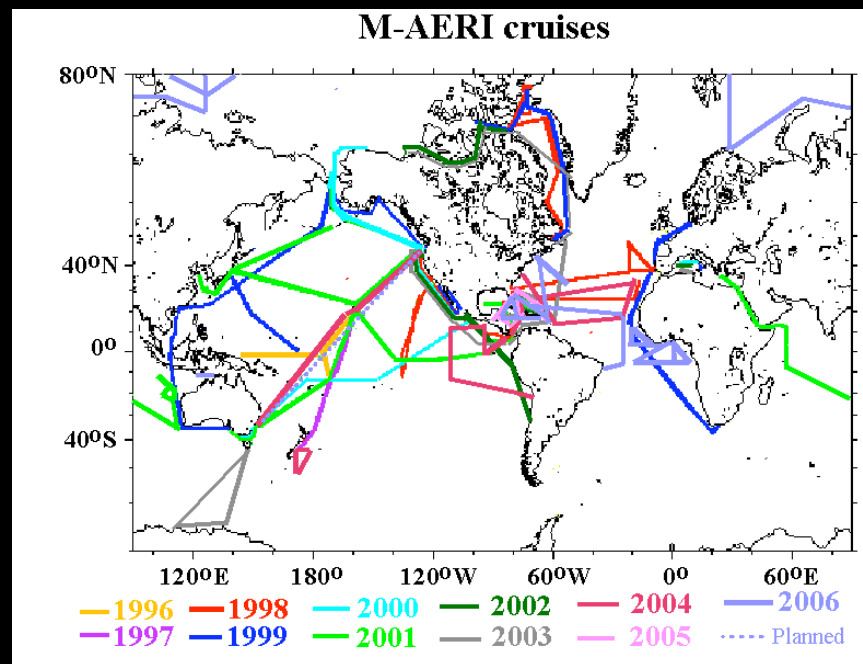
- SST validation & algorithm status
- Calcite algorithm status
- Data merging, data assimilation, & CDRs
  - Does the CZCS data set qualify as a CDR?
- In situ data requirements workshop report
- Pigment analyses and pigment round-robin results
- Ocean color vicarious calibration methodology
- VIIRS & future missions



# Significant Developments

## - SST

- MODIS SST products are being provided in near-real time to JPL in support of the Global Ocean Data Assimilation Experiment (GODAE) High Resolution SST Pilot Project (GHRSSST).
- U Miami/RSMAS has deployed the M-AERI radiometer for SST skin temperature observations on 40 cruises (23 ships) to date (3352 days at sea).
- Current statistics (11-12  $\mu\text{m}$ ): mean bias/rms ( $^{\circ}\text{C}$ )
  - Terra day: 0.09/0.58
  - Terra night: 0.006/0.43
  - Aqua day: 0.037/0.59
  - Aqua night: -0.039/0.51
- Some biases remain
  - high latitudes (cloudy)
  - residual water vapor effects
- Using M-AERI to validate AMSR SSTs, then use AMSR SSTs for MODIS SST validation

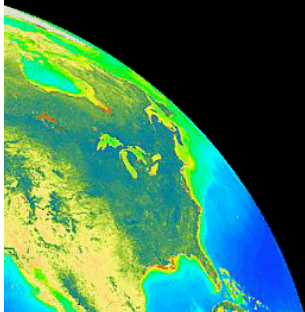
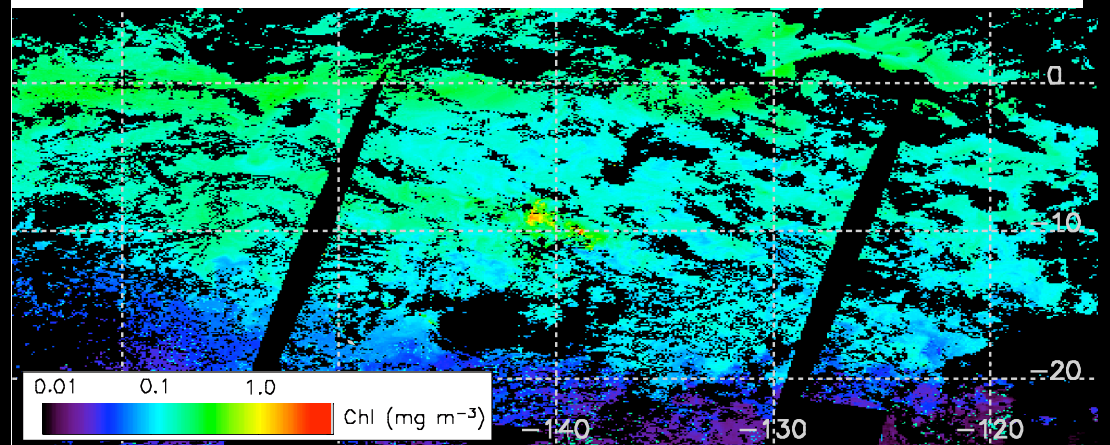
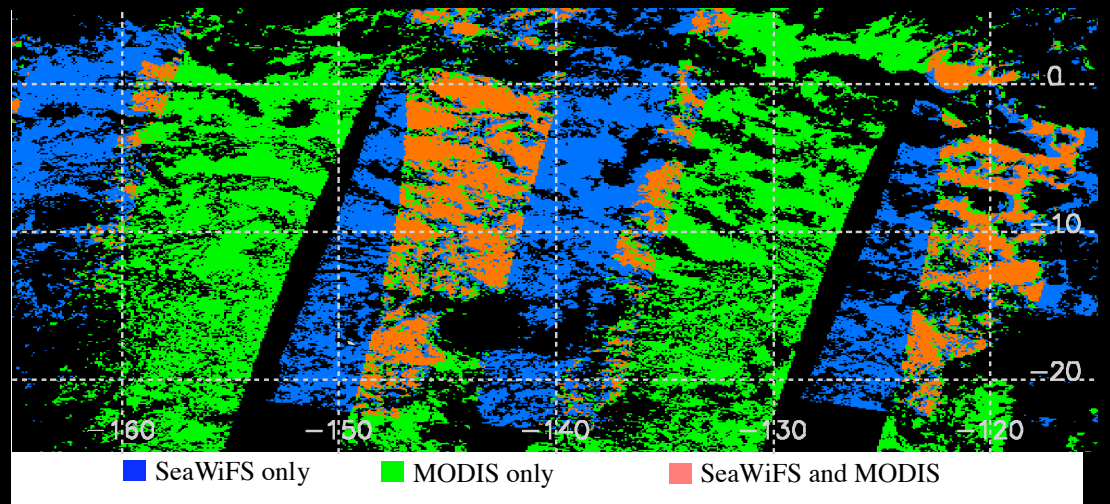


# Significant Developments

## (Continued)

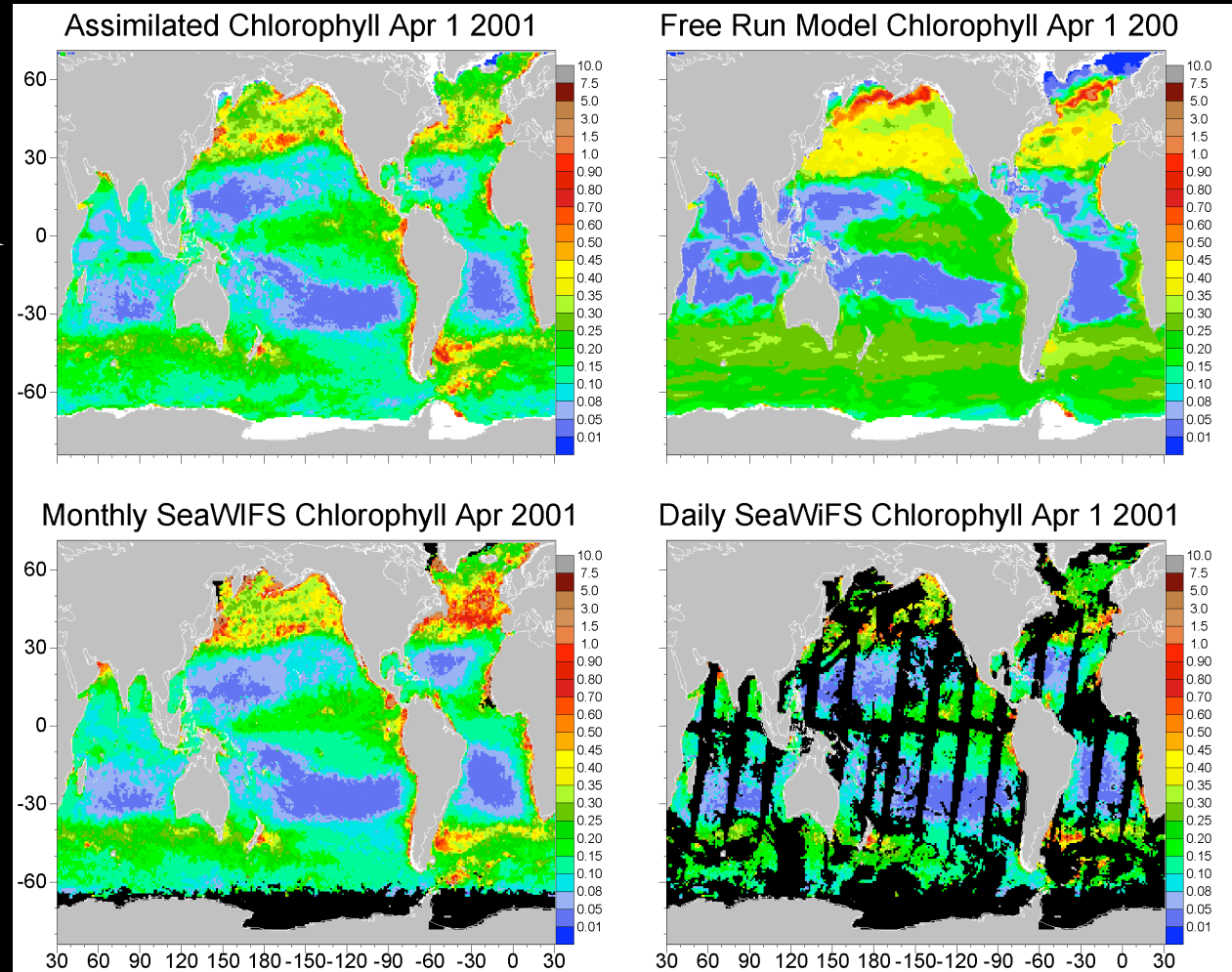
- Data Merging

- UC/Santa Barbara using SeaWiFS and MODIS Lwn's to generate global chlorophyll-a and other products using semi-analytic model.
- Requires consistent Lwn products at all visible wavelengths
- SeaWiFS daily coverage ~ 15% global ocean
- SeaWiFS + MODIS/Aqua ~ 25%

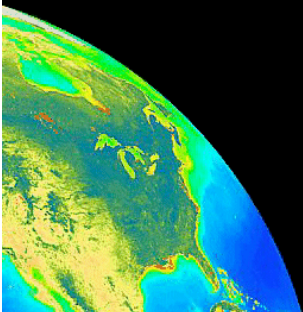


# Significant Developments (Continued)

- Data Merging
  - Data Assimilation (Watson Gregg)
  - Coupled global ocean circulation model (GCM) and biogeochemical model using NCEP atmospheric forcing.



Vince, this one is  
for you!



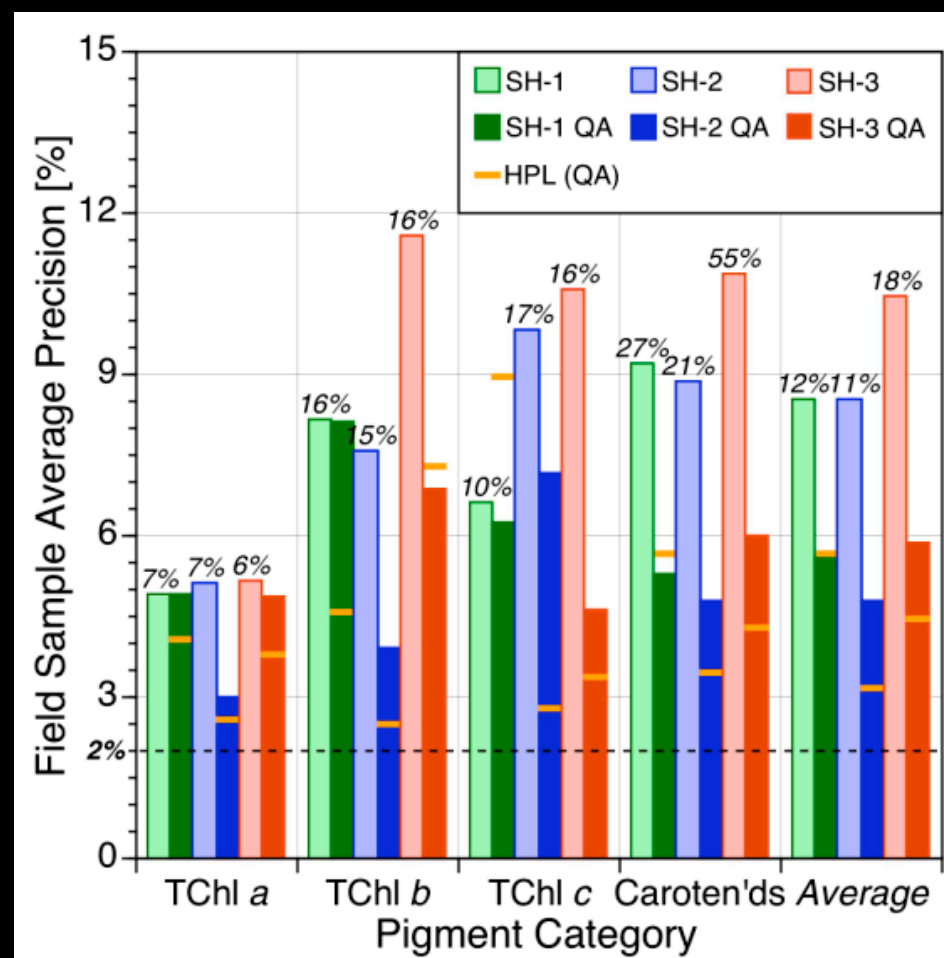
# Significant Developments

## (Continued)

- Pigment Round-Robins (Stan Hooker)

- Comparisons of pigment analyses across different laboratories
- 3 pigment round-robins completed and 4th underway
- International participation
  - 4th RR includes 12 labs in USA, France, Italy, Canada, Denmark, & Australia

NASA funded investigators submit pigment samples to one laboratory for analyses (currently the UMD Horn Point Environmental Lab)



# Significant Developments

## (Continued)

- Derived Product Improvements
  - Calcite (Barney Balch)
    - Participation in 4 Atlantic Meridional Transect (AMT) cruises
    - Calcite ( $\text{CaCO}_3$ ), an important component of Particulate Inorganic Carbon (PIC)
    - Calcite solubility increases with ocean acidification, a result of increased atmospheric  $\text{CO}_2$ .

