

Oceans Panel Report to the IWG 8/29/91

- Science requirements/questions have not changed substantially
 - priorities for EOS era revolve around linkages between systems
 - focus is to observe processes that should be included explicitly in models, along with an understanding of associated error fields
 - critical contributions to biogeochem. cycling and heat storage; transport
- Capitalize on pre-EOS missions; field programs

Key Instruments

- Passive microwave radiometers
(MIMR, SSM/I)
- Ocean color radiometers
(MODIS-NiT, OCTS, MERIS...)
- IR radiometers
(MODIS-N, VIRSE...)
- scatterometers
(SEWSCAT, ASCAT)
- altimeters
(RA-1, SALT, Geosat II...)
- SAR
(ERS-1, JERS-1, Radar sat...)

Interagency/International Linkages

- Overwhelming majority of key instruments to be supplied by non-EOS entities
- Unacceptable decreases in science if non-EOS data are not available or otherwise degraded
- EOS program office must take lead in developing mechanisms to assure "adequate", timely data from non-EOS instruments
 - similar to cost/schedule/technical contingencies applied to instrument development
 - cover algorithms, data delivery, intercalibration programs, etc.
 - OCTS/SeaWiFS as testbed!

Ocean color

- Essential for pigment/productivity
- Heat storage in upper ocean

Issues

- coverage
- complete spectral coverage (DOM, pigment group)
- instrument capabilities

Recommendations

MODIS-N

tilting color sensor - no gap w/ SeaWiFS spectrometer in future

programmatic commitment for non-FOS sensors

Scatterometry

- Only technique for acquiring all-weather, vector wind stress information
- Required by > 50% IDS investigators

Issues

- STKSCAT ; ASCAT are only EOS-era possibilities
- C-band scatterometers unproved
- ESA commitment unknown
- Significant, wide-ranging science loss if no scatterometer in EOS era.

Recommendation

- Do not preclude flight of STKSCAT on early EOS mission until
 - C-band system is shown to be accurate
 - ESA commits to fly accurate ASCAT

Altimeter

- Primary instrument for ocean circulation, heat storage, \dot{Q} advective heat flux

Issues

- No plan at present for U.S.-supplied instrument
- Delta launch as shown has not been coordinated with French

Recommendation

- Requirement remains for having altimeter data with TOPEX error budget
- NASA to define achievable mission scenario, possibly using free-flyer and/or foreign contribution