

Overview

- **NOAA Remote Sensing Efforts**
 - Transition to operations / applications
 - Operations
 - Research
- **NOAA Satellite Observation Parameters**
 - Altimetry
 - Ocean vector winds (OVW)
 - Ocean color
 - Sea-Surface Temperature (SST)
 - Sea ice (infrared, microwave active and passive)
 - Synthetic Aperture Radar (SAR)
- **2006 Coastal Remote Sensing Workshop**
 - Status of NOAA recommendations

Operationalizing Research Data Streams

- **ORRAP – IWGOO: Is there a funded plan to transition successful space experiments to operations?**
 - NOAA and NASA have a joint team developing transition plans and working toward a formalized process for designated missions/projects
 - NESDIS Assistant Administrator, Mary Kicza, is engaged in ongoing discussions with NASA
 - Concept: Establishing NOAA Transition Project Scientists/Managers for each NASA mission relevant to NOAA's needs
 - **Transition funding is an issue**
 - Not usually included in research mission budgets
 - Not usually in NOAA's base budget
 - Must develop a funding initiative for each transition effort and compete with other NOAA priorities, confined to budget cycle (2 years away)
 - Or, reprogram existing resources (especially for near-term (less than 2 years) transitions)
 - Operational resources required in addition to transition funding

NOAA Strategic Satellite Plan (2007) Recapitalization

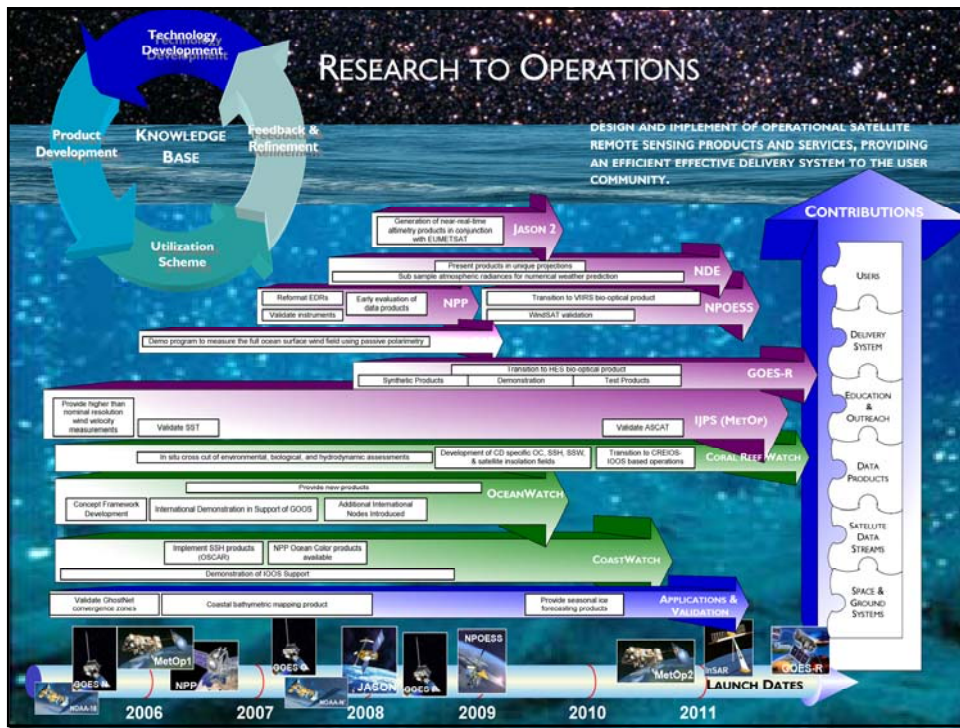
MEASUREMENT GROUP 1					
Measurement Area	GOAL				
	WW	CL	EC	C&	
Imagery/Radiometry (VIS/IR)*	X	X		X	
Imagery/Radiometry (MW)*	X	X		X	
Atmospheric Temperature Profiles*	X	X	X	X	
Atmospheric Moisture Profiles*	X	X		X	
Lightning	X			X	
Soil Moisture*	X	X		X	

MEASUREMENT GROUP 2					
Measurement Area	GOAL				
	WW	CL	EC	C&	
Ocean Surface Vector Winds**	X	X	X	X	
Sea Surface Height**	X	X	X	X	
Ocean Color	X	X	X		
Coastal Waters/Habitat	X	X	X	X	
Bathymetry	X	X	X	X	

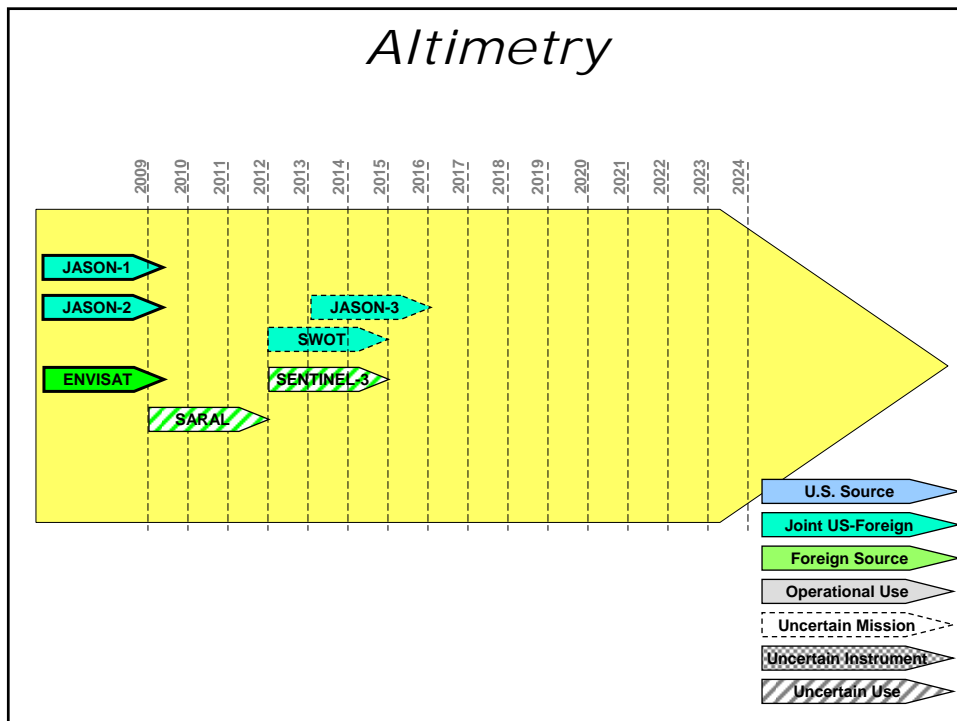
* Continuity on NOAA Space Platforms
 ** Contains or consists of Non-NOAA observations used operationally
 X Indicates measurement in CORL associated with Goal

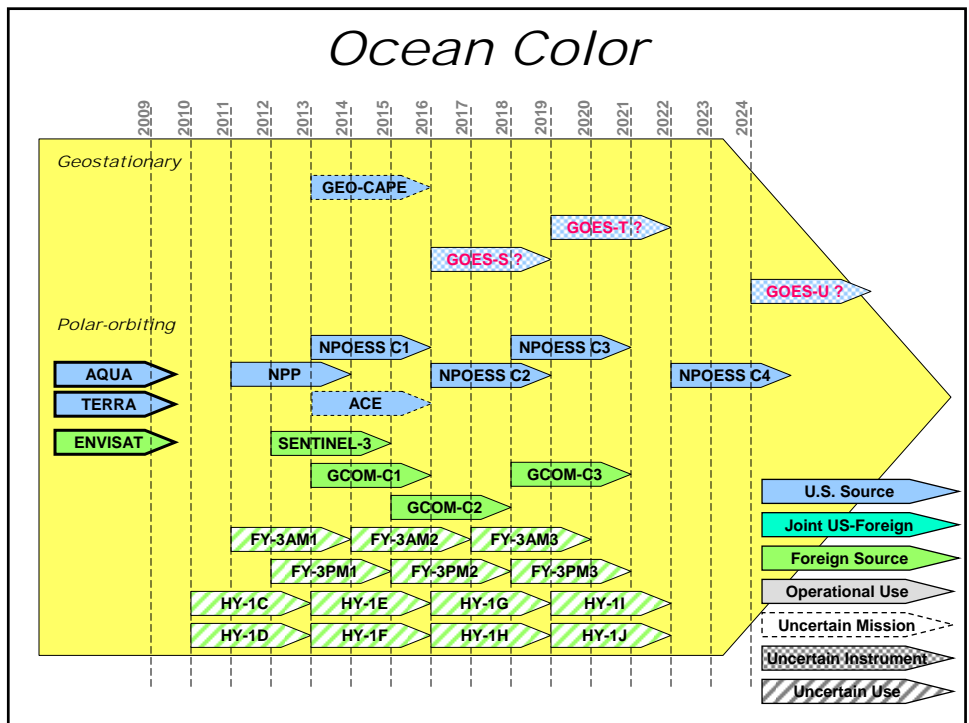
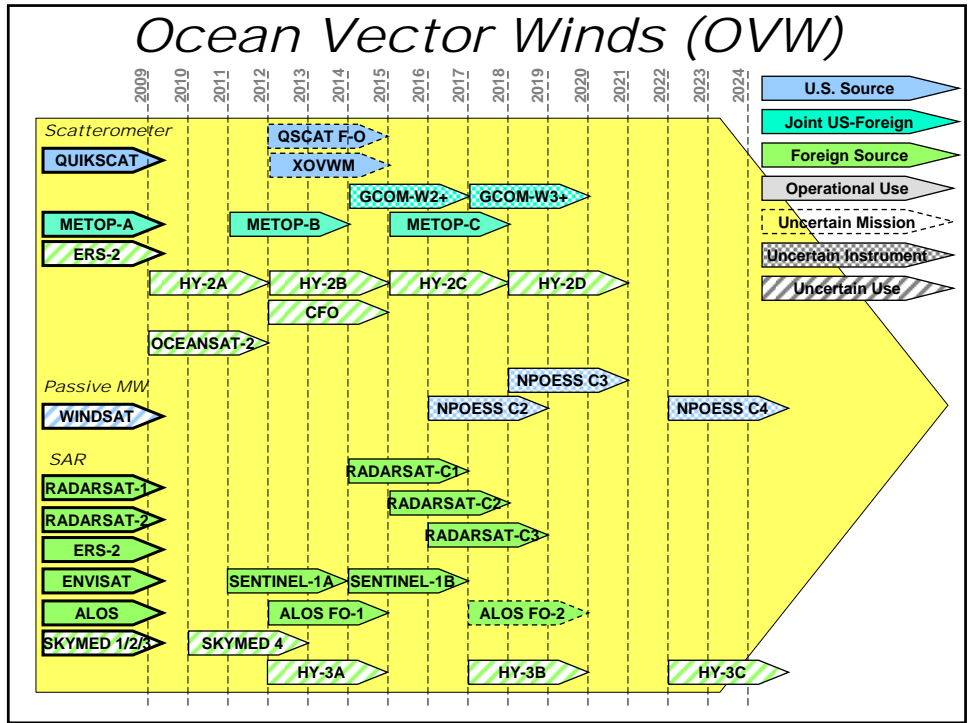
MEASUREMENT GROUP 3					
Measurement Area	GOAL				
	WW	CL	EC	C&	
Earth Radiation Budget	X	X	X	X	
Aerosols/Polarimetry	X	X	X	X	
Ozone Profiles	X	X			
Solar Irradiance	X	X			
Carbon	X	X	X		
Snow Depth	X			X	
Ice Thickness	X	X	X	X	

MEASUREMENT GROUP 4					
Measurement Area	GOAL				
	WW	CL	EC	C&	
Tropospheric Winds	X	X	X	X	
Precipitation Type**	X	X	X	X	
Radio Occultation **	X	X	X	X	
Space Environment*	X				
Solar Measurements* **	X				

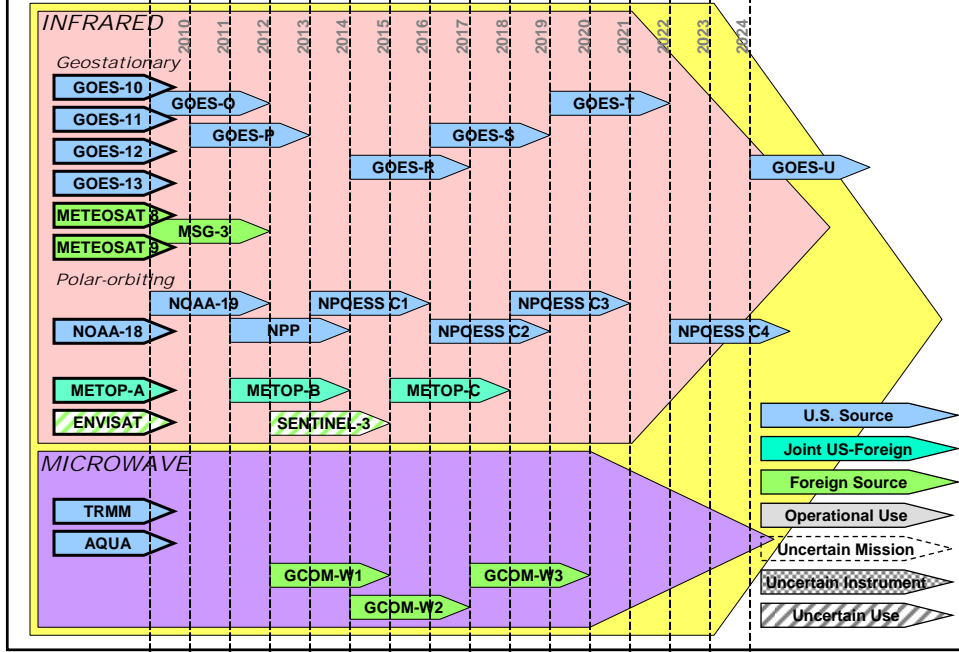


NOAA Satellite Data Streams

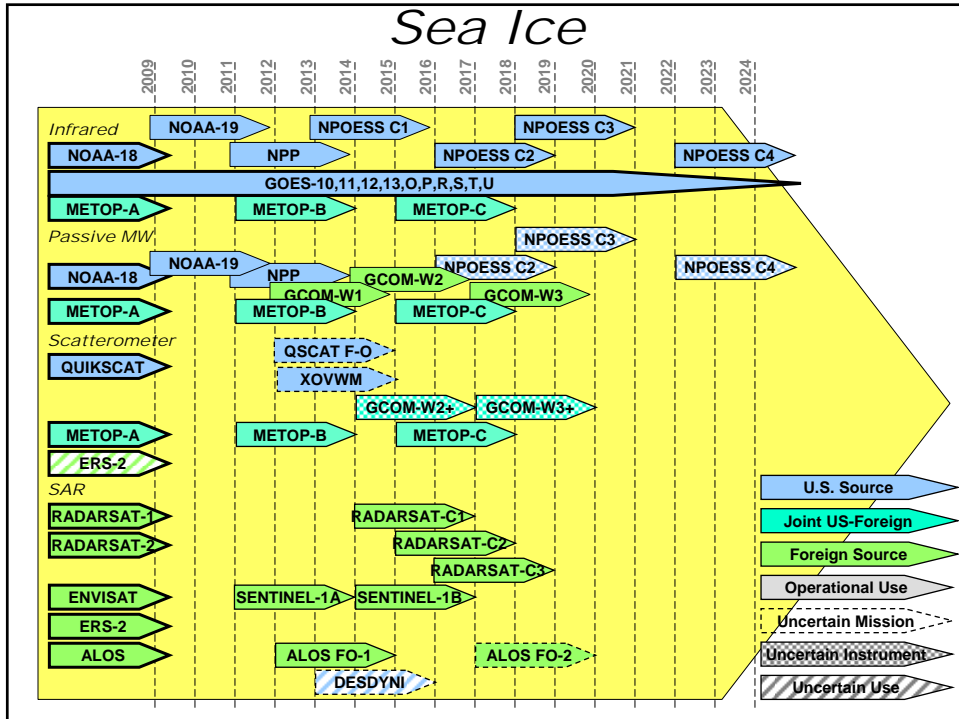




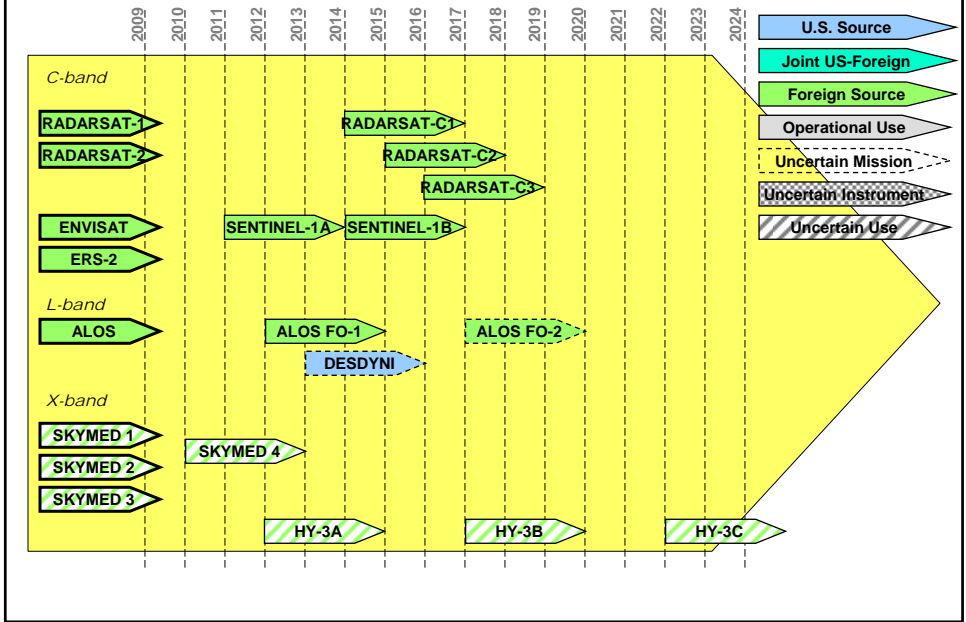
Sea-Surface Temperature (SST)



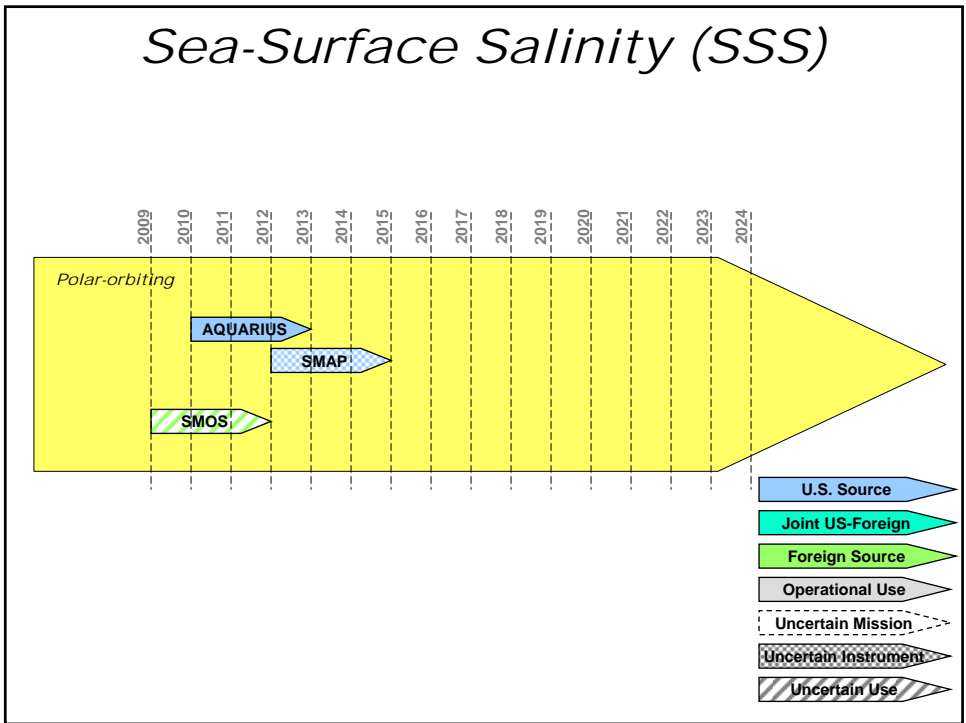
Sea Ice



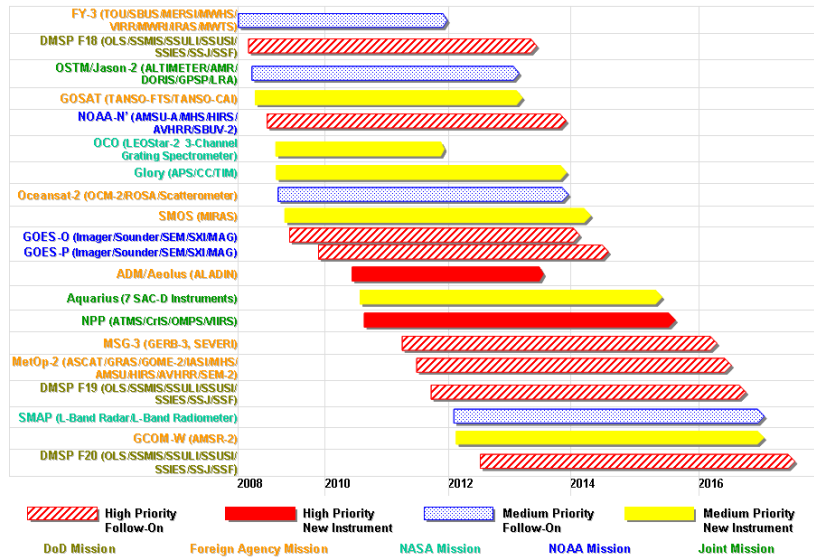
Synthetic Aperture Radar (SAR)



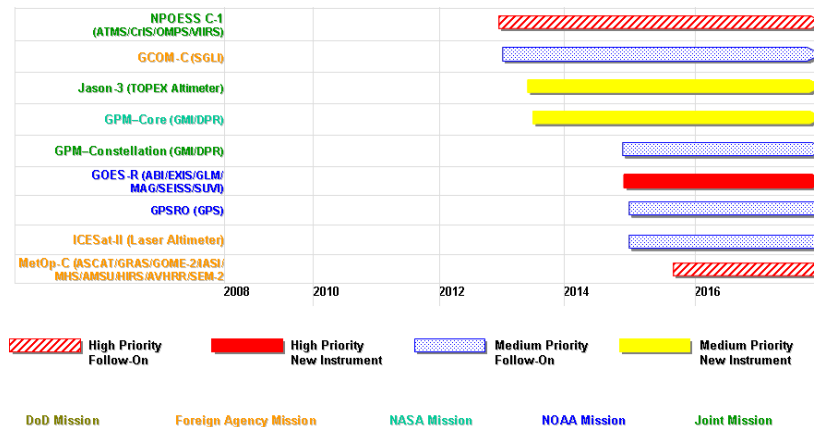
Sea-Surface Salinity (SSS)



Joint Center for Satellite Data Assimilation NOAA – NASA – DoD



Joint Center for Satellite Data Assimilation NOAA – NASA – DoD



*Response
to
Recommendations*



2006 Coastal RS Workshop: General Recommendations

IMMEDIATE ACTIONS

- Fund pilot projects to demonstrate applications of remote sensing data. NOAA and NASA should jointly fund
 - Some NOAA IOOS and other NOAA (CoastWatch Carib/GoMEX) funding has been applied toward RS application, e.g., supporting the IOOS Caribbean Area RA (CARA)

INTERMEDIATE ACTIONS

- Simplify access to data and products; NOAA and NASA should work with Ocean.US to identify potential funding for developing
 - NOAA CoastWatch (NESDIS) is implementing the IOOS Data Integration Framework and a THREDDS server for enhanced distribution and access to satellite ocean data
- Develop compelling education and outreach material
- Ensure continuity and enhance utility of existing and planned satellite observing capabilities and adapt streams
 - Pursuing via budget processes (XOVWM, Jason-3, ...)
 - Developing foreign backup sources (ENVISAT/MERIS, Oceansat-2/OCM2, GCOM-W/AMSR-2, ...)

LONG-TERM

- Develop and implement new and improved space-based observing capabilities that better resolve and sample the coastal zone
 - NOAA transition efforts with NASA (Geo-CAPE, SWOT)
 - NOAA coastal altimetry workshops (2008)

2006 Coastal RS Workshop: NOAA Recommendations

IMMEDIATE ACTIONS:

- Competitively fund a series of regional pilot projects that demonstrate the integration and utility of remote sensing products with an emphasis on transferability and sustainability beyond the pilot stage.
 - Pursuing funding via the budget process
 - Implementing the IOOS Data Integration Framework (DIF)
 - CoastWatch partnerships with RA efforts
- Facilitate (regional) leveraging and integration of CoastWatch as part of IOOS
 - CoastWatch engaging NOAA's regional coordination efforts
 - CoastWatch nodes directly engaged with RAs
- Ensure continuity of vicarious calibration capabilities for ocean color heading into the VIIRS operational ocean color era
 - Completed: confirmed operational funding on track for MOBY
 - Developing next-generation MOBY-C
- Support development of high-resolution climatologies/climate-quality data records for multiple parameters
 - Efforts underway for SST and SSH

2006 Coastal RS Workshop: NOAA Recommendations

IMMEDIATE ACTIONS (cont.):

- Fund planning and coordination at the regional level to develop a plan for data distribution, access, and product development
 - NOAA IOOS Project Office working on this effort
- Ensure that there are high data volume telecommunication capabilities to get the data out to the RAs
 - Working with enhanced communications in conjunction with NESDIS/STAR and CoastWatch move to NCWCP (~ early 2010)
- Ensure archiving capabilities satisfy the requirements/needs of the RAs
 - Being investigated
 - CoastWatch working with NODC to archive products
- Identify and implement low-cost aircraft solutions to complement satellite measurements for coastal applications
 - NOAA exploring
- Support improved communication and coordination of information and existing activities/projects within and between agencies and RAs vis-à-vis remote sensing
 - Ongoing

2006 Coastal RS Workshop: NOAA Recommendations

LONGER-TERM ACTIONS:

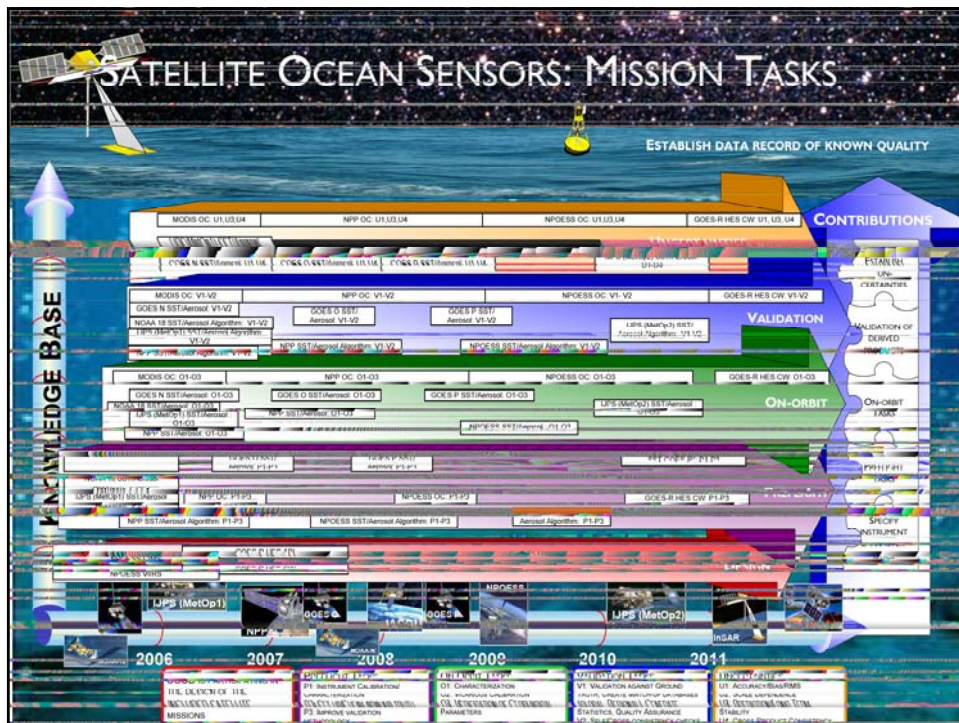
- Transition measurement of ocean vector winds from research to operations by supporting development and launch in the earliest possible time frame of the next generation scatterometer mission
 - **XOVWM**
 - **NOAA-funded trade studies**
 - **QuikScat Follow-On**
- Ensure continuity of precision altimetry, working with NASA and other partners to continue the Jason series, eventually transitioning to swath altimetry
 - **NOAA pursuing Jason-3 in conjunction with partners**
 - **SWOT on decadal survey mission list for NASA**
- Work with NASA and other partners to facilitate the transition of successful R&D technologies for use in operations, particularly the geostationary ocean color and high-spatial-resolution coastal imaging capabilities
 - **NOAA engaged in Geo-CAPE community effort**

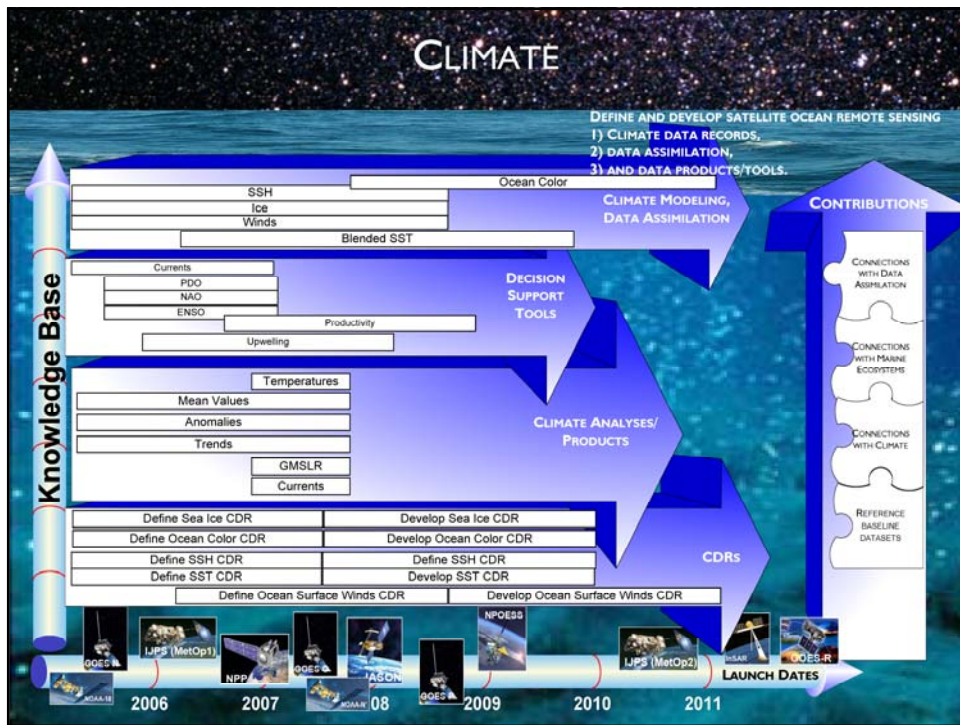
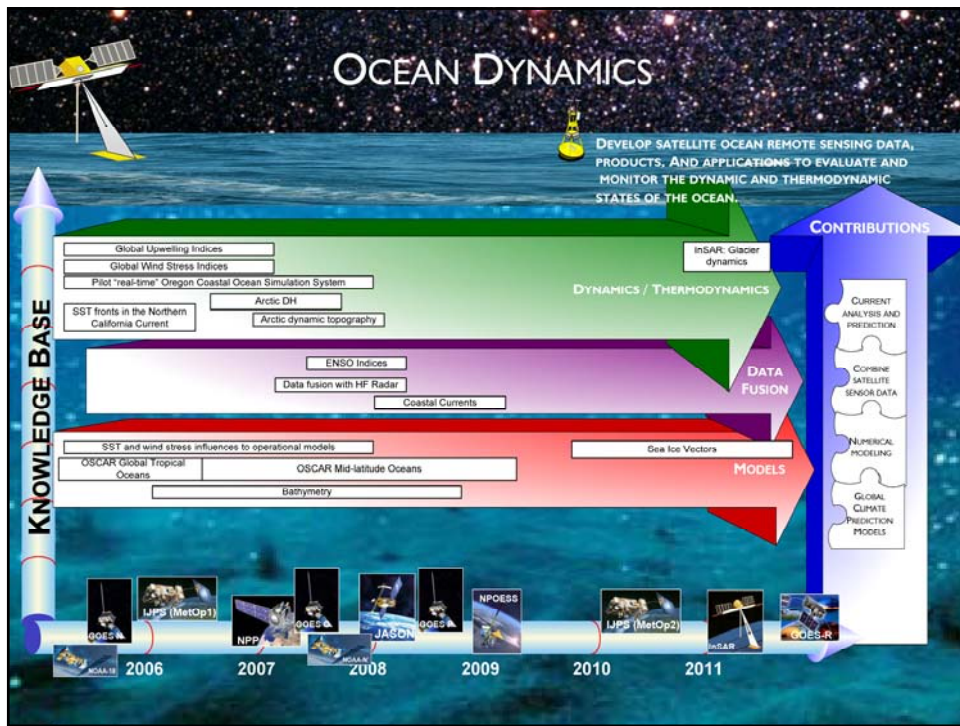
Summary

- NOAA is working hard to ensure continuity of operational satellite ocean observations and to exploit new satellite data opportunities
- NOAA and NASA are working to establish a robust process for transitioning NOAA-required research satellite observations into NOAA operations
- Resources continue to be a major issue
 - Much has been done, but much more needs to be done
 - Continuing infrastructure / background costs (calibration, validation, science maintenance, user support, etc.) require greater resources and dedicated funding for each transition effort

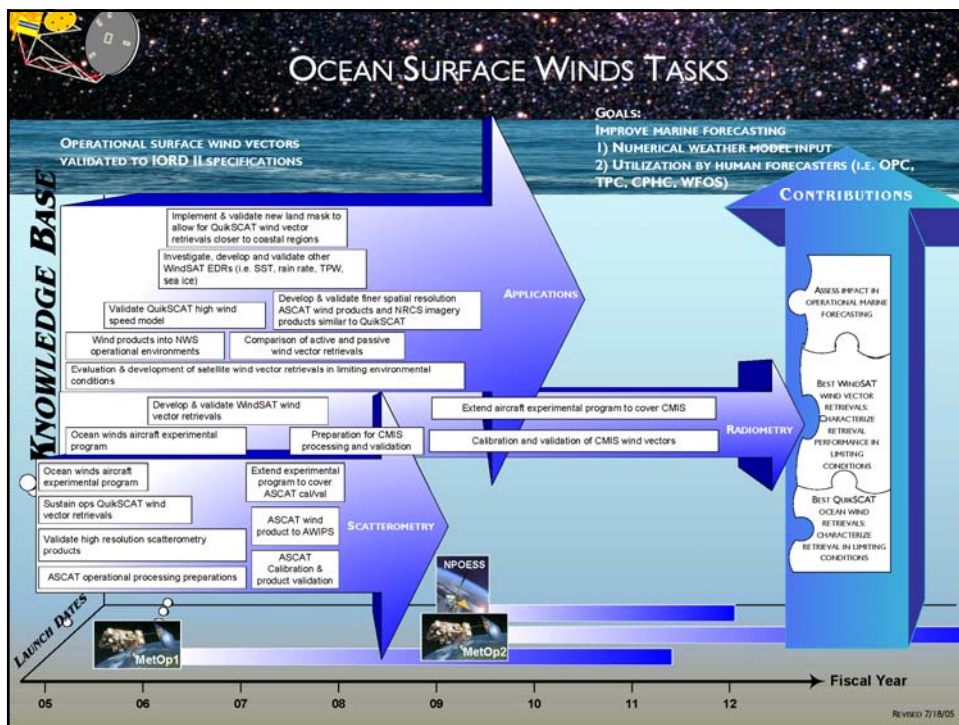
BACKUP SLIDES

NOAA/NESDIS/STAR Research – Operations / Applications Strategic Planning Roadmaps

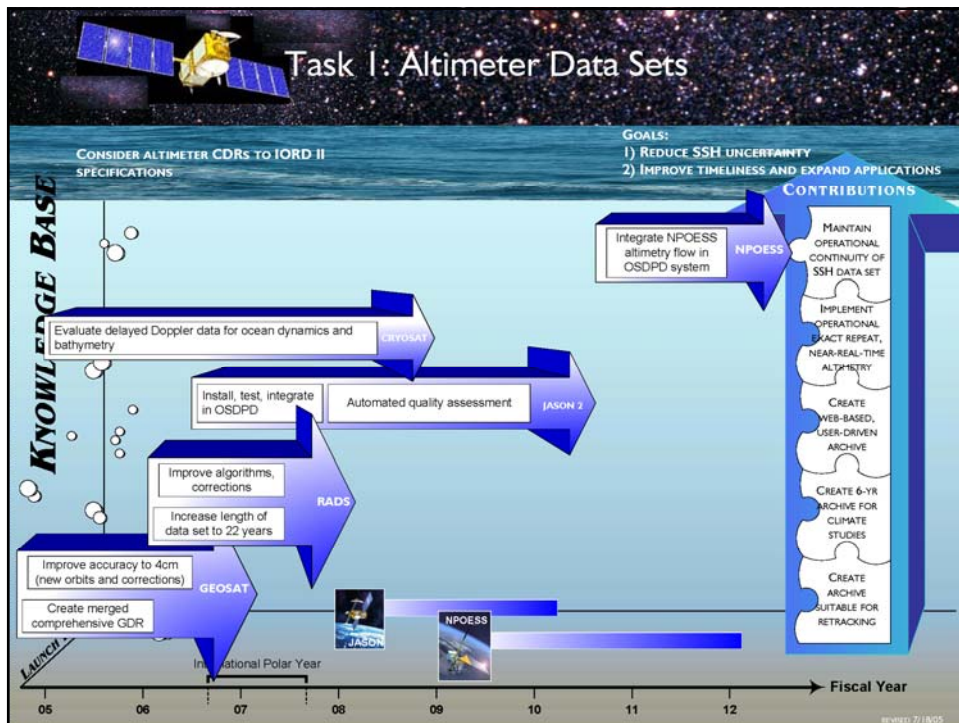


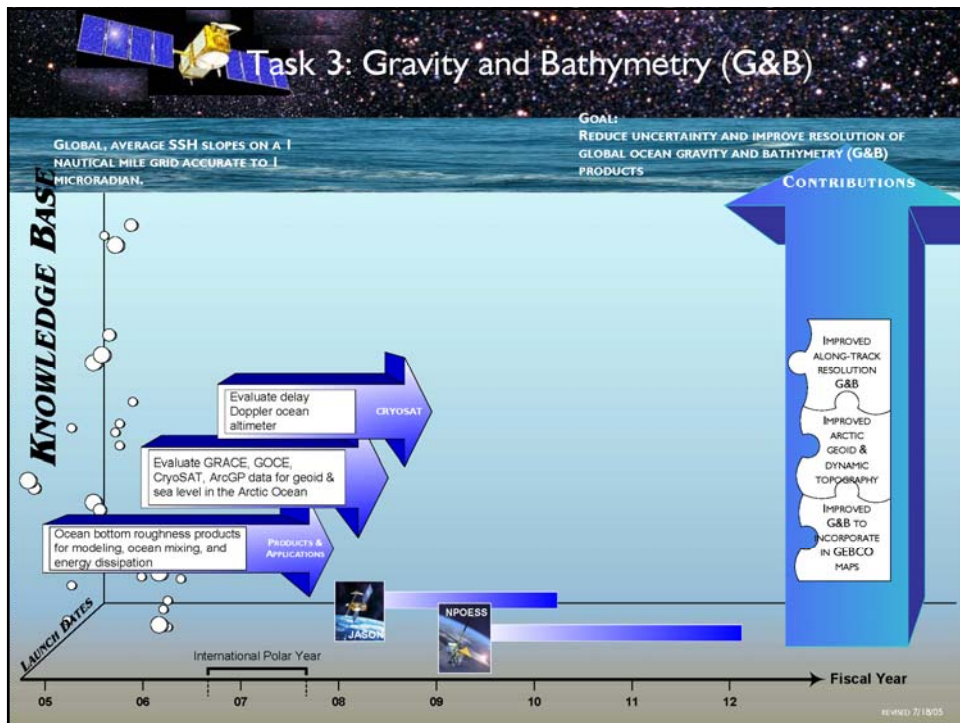
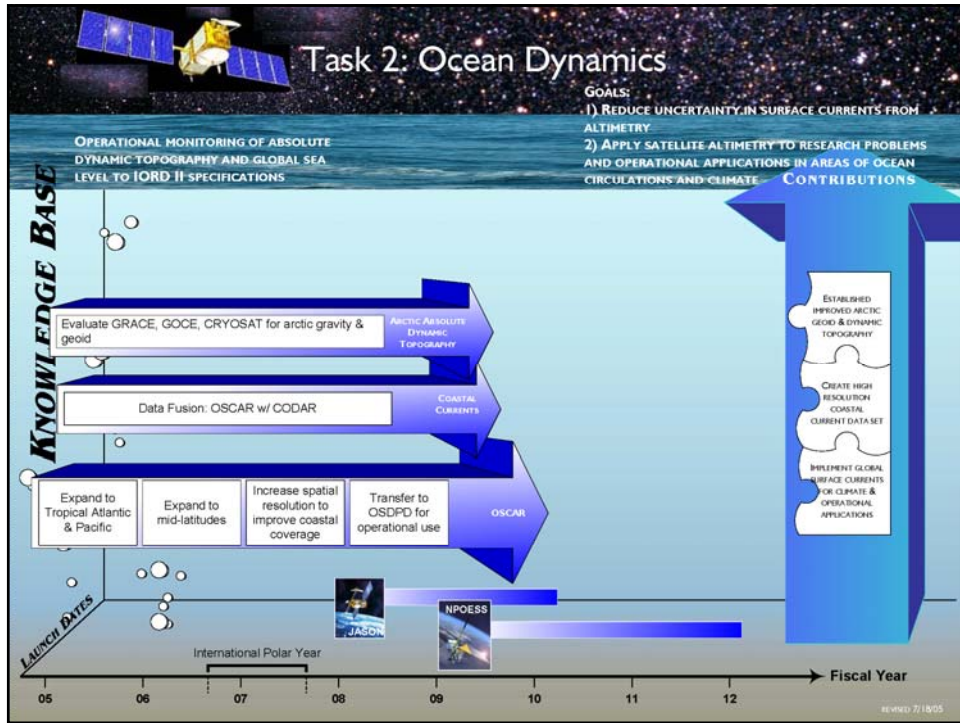


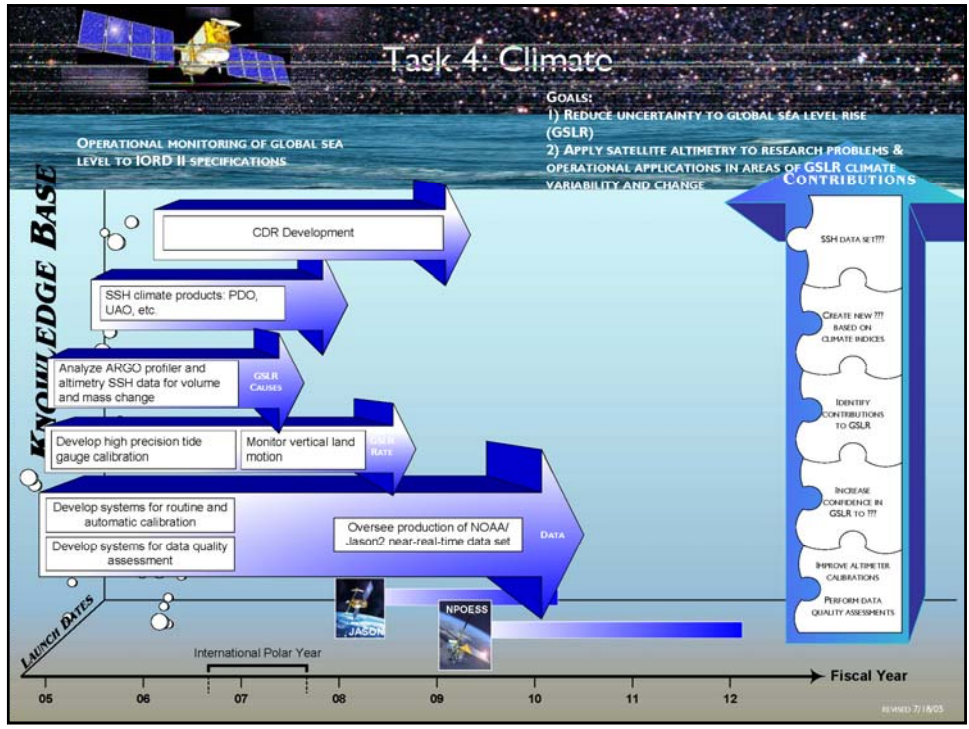
Ocean Vector Winds



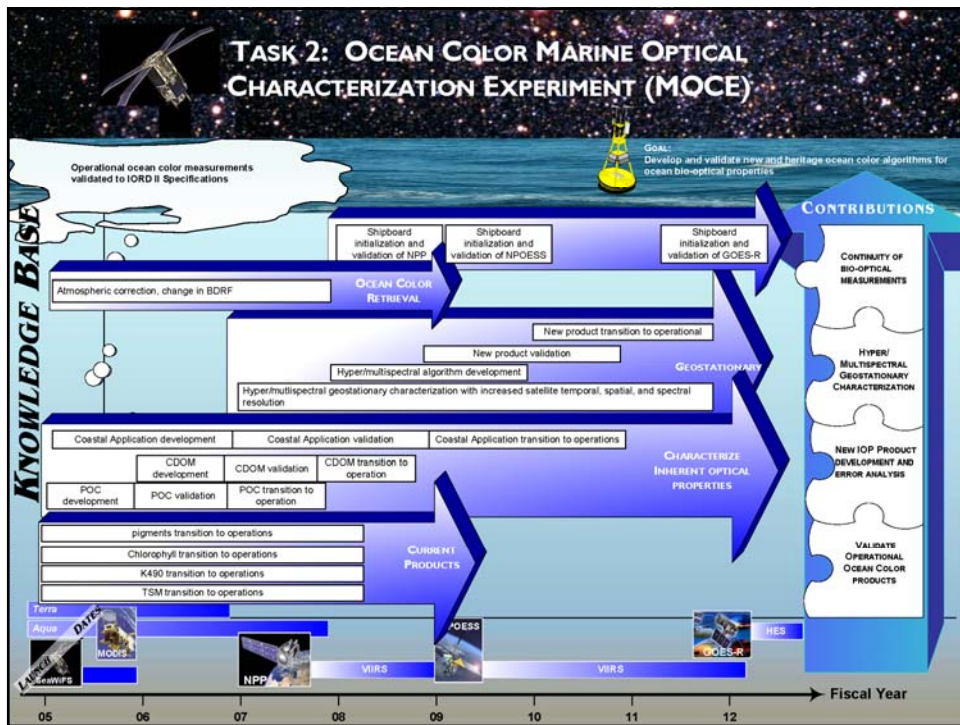
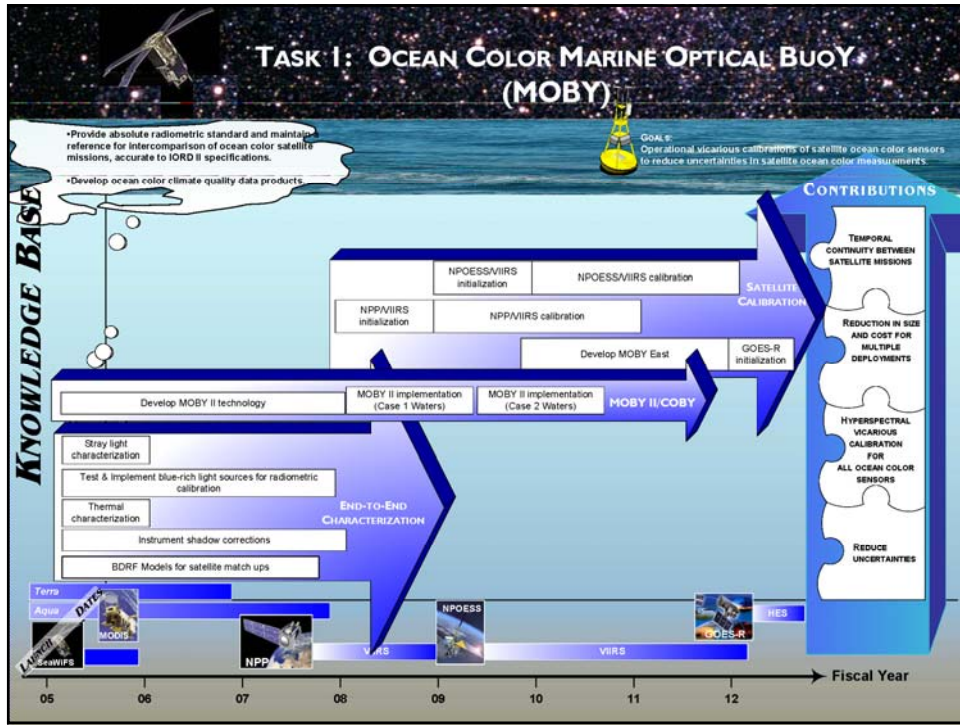
Altimetry

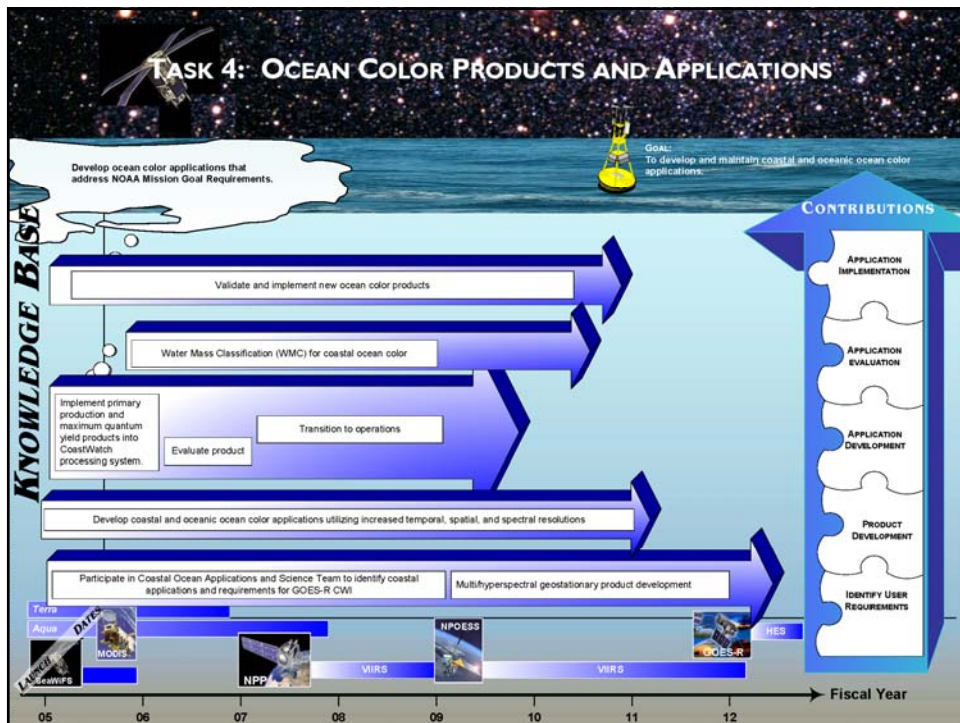
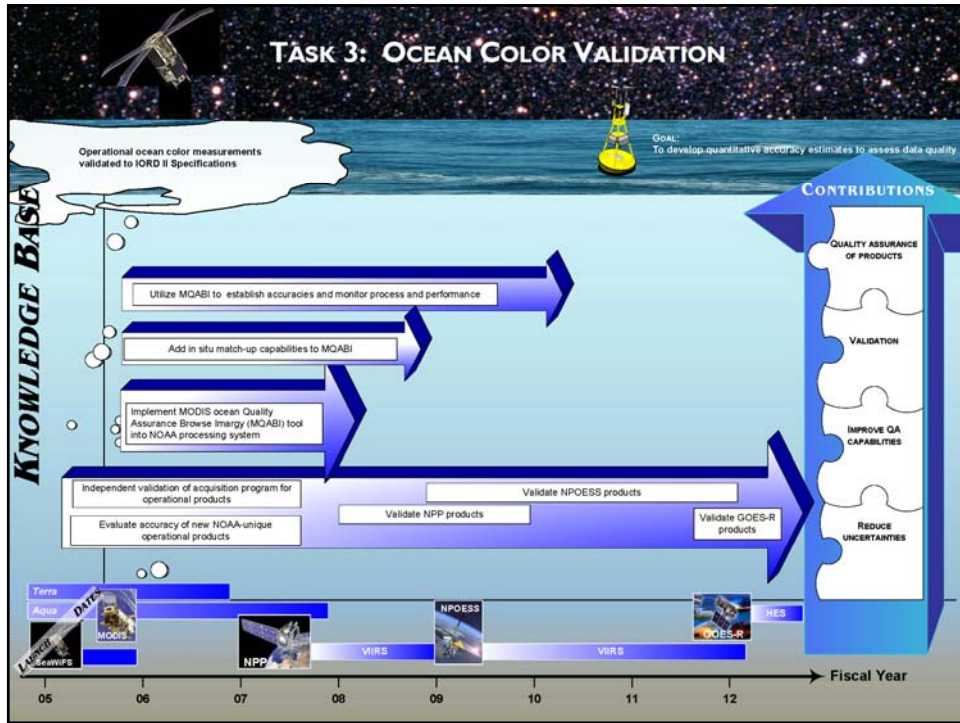




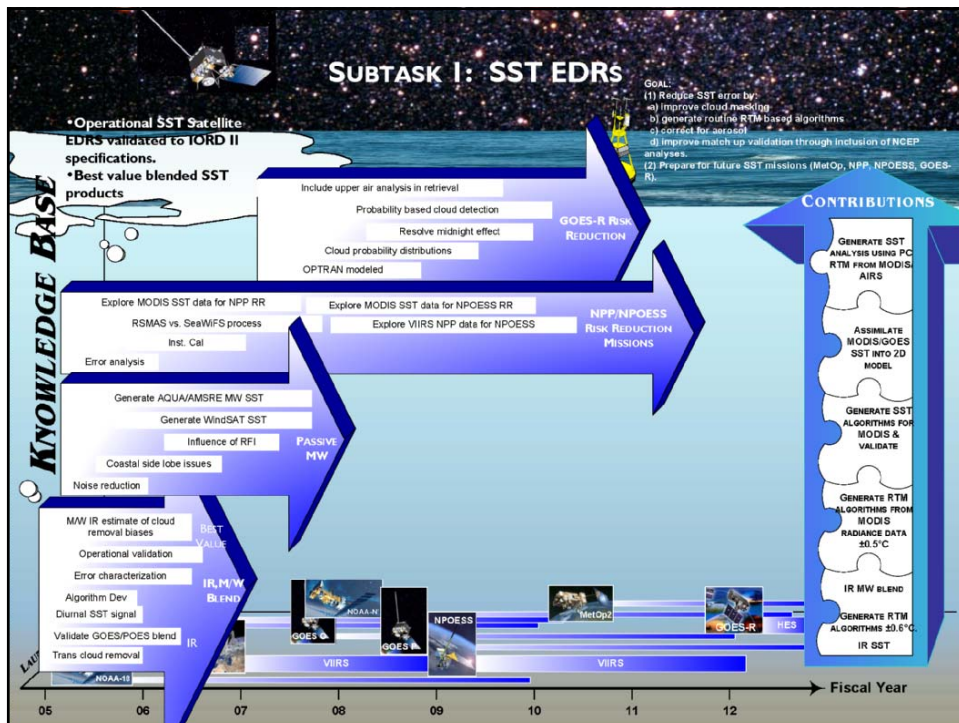


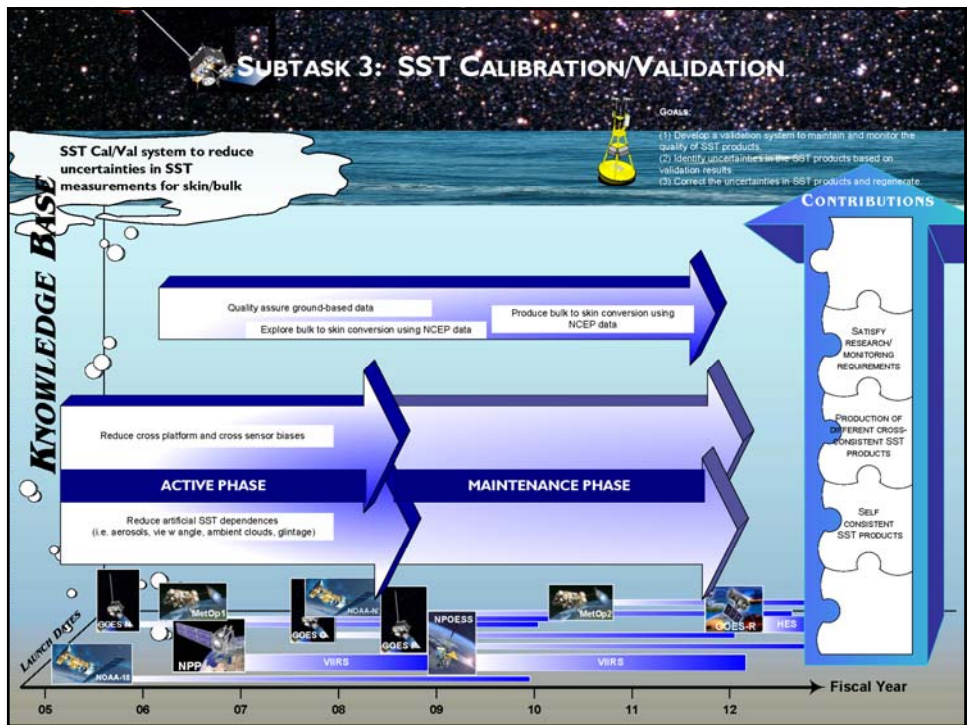
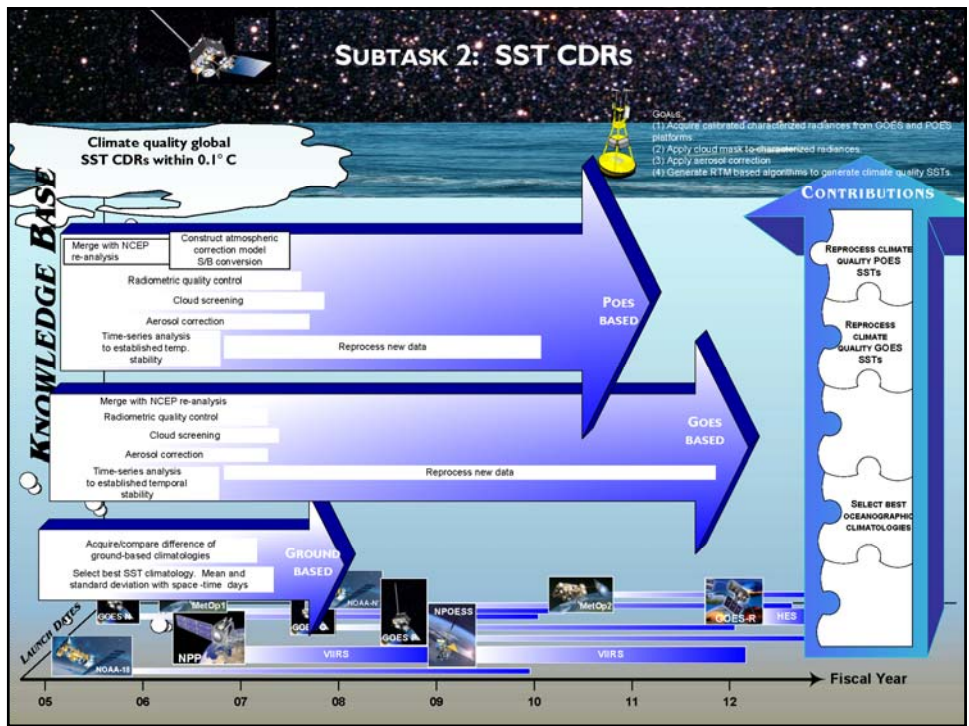
Ocean Color

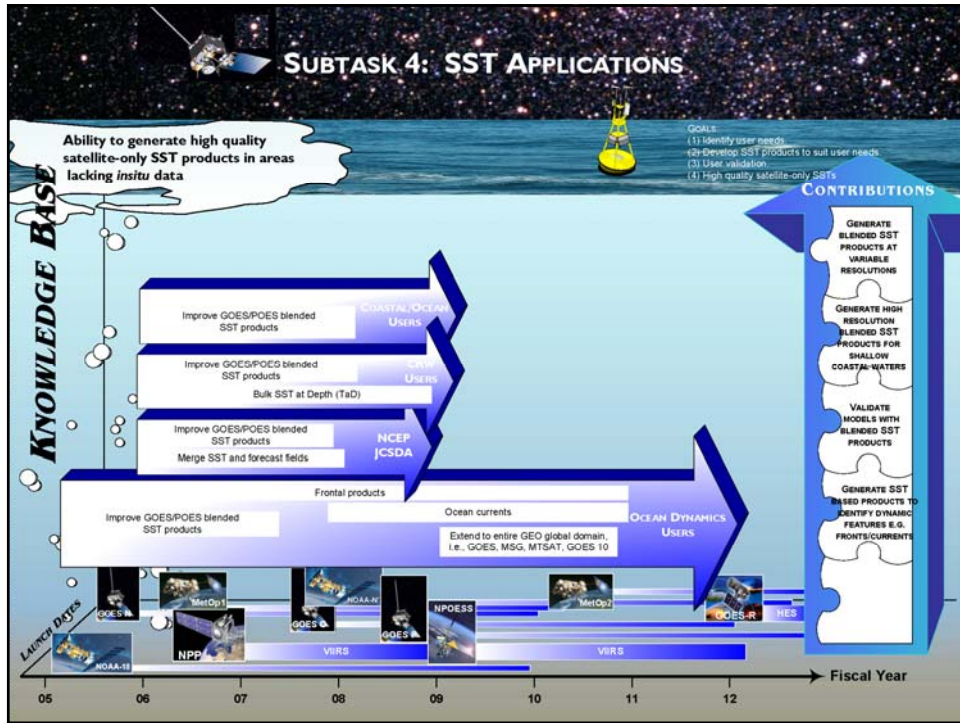




Sea-Surface Temperature







Sea Ice

