



VIIRS Ocean Color Breakout  
Thursday, 27 August 2015

## **Overview of VIIRS Cal/Val Nov. 2014 Cruise & Cruise Objectives**

Michael Ondrusek

# Dedicated VIIRS Cal/Val Cruise

## NOAA Ship Nancy Foster

11-20 November 2014



### *International, Interagency and Academic Collaborations:*

#### **US Agencies**

- **NOAA/NESDIS/STAR** (NOAA)
- Naval Research Laboratory, Stennis Space Center (**NRL**)
- NASA/Goddard Space Flight Center (**NASA**)
- National Institute of Standards and Technology (**NIST**)

#### **European Union**

- Joint Research Center of the European Commission (**JRC**)

#### **Universities**

- City University of New York, Long Island; CREST
- Lamont-Doherty Earth Observatory, Columbia University
- University of Massachusetts, Boston
- University of Miami
- University of South Florida
- University of Southern Mississippi



## Principal investigators (PIs)

PI Name (Last, First)	Participating Institutions	Research Group Abbreviation
Ondrusek, Michael*	NOAA/NESDIS Center for Science, Technology and Research	NOAA/STAR
Ahmed, Sam	City College of New York	CCNY
Arnone, Robert	University of Southern Mississippi (USM) and Naval Research Center (NRL)	Stennis
Freeman, Scott	NASA Goddard Space Flight Center	NASA/GSFC
Gilerson, Alex	City College of New York	CCNY
Goes, Joaquim	Lamont-Doherty Earth Observatory at Columbia University	LDEO
Hu, Chuanmin	University of South Florida	USF
Johnson, B. Carol	National Institute of Standards and Technology	NIST
Lee, ZhongPing	University of Massachusetts, Boston	UMB
Neeley, Aimee	NASA Goddard Space Flight Center	NASA/GSFC
Voss, Kenneth	University of Miami	U. Miami
Zibordi, Giuseppe	Joint Research Centre of the European Commission	JRC

## List of science party personnel aboard the *Nancy Foster*

Name (Last, First)	Title	Research Group/Home Institution*
Arnone, Robert	Research Professor	Stennis/USM
Freeman, Scott	Staff Research Scientist	NASA/GSFC
Goes, Joaquim	Research Professor	LDEO
el Habashi, Ahmed	PhD Student	CCNY
Ibrahim, Amir	PhD Student	CCNY
Kovach, Charles	Researcher	USF
Lin, Junfang	Postdoctoral Researcher	UMB
Neeley, Aimee	Staff Research Scientist	NASA/GSFC
Ondrusek, Michael	Chief Scientist	NOAA/STAR
Goode, Wesley	Researcher	Stennis/NRL
Stengel, Eric	Researcher	NOAA/STAR
Talone, Marco	Researcher	JRC
Vandermeulen, Ryan	Remote Sensing Analyst	Stennis/USM
Wei, Jianwei	Postdoctoral Researcher	UMB
Zibordi, Giuseppe	Researcher	JRC

# Science Objectives for the Cruise

## Goals

### 1) Validation of VIIRS JPSS Satellite Ocean Color products

- **Occupied 23 Stations over 10 Days, 9 station matchups with VIIRS**
- **Conducted pre- and post-cruise inter-cals**
- **Water-Leaving Radiance** - HyperPro, MicroPro, HyperTSRB, C-OPS, GER, SBA, TRIOS, HyperSAS, ASD Handheld 2
- **Aerosol Optical Depth** - Microtops
- **Bi-directional radiance distribution** - NURADS
- **Chlorophyll** - HPLC, Fluorometric, (in situ and extracted)
- **Absorption** - ACS, AC9, Spectrophotometric
- **Backscatter** - BB9, BB7, BB3, ECO Puck
- **Phytoplankton Physiology** - Flowcam, FIRE, Alf
- **Carbon** - POC and DOC water analysis; plus CDOM
- **Total Suspended Matter** - Gravimetric

# Science Objectives for the Cruise

## Goals (cont.)

### 2) Characterization of differences among the in situ ocean color measurements

- a) replicate observations from multiple identical (same model) instruments deployed in parallel;
- b) observations of the same in situ parameters but using different types of instruments;
- c) different deployment protocols for sample collection;
- d) different post-processing methods for the in situ data; and
- e) spatial and temporal variability of the ocean waters.



# Science Objectives for the Cruise

## Goals (cont.)

### 3) Optical characterization of ocean variability (i.e. coastal, near-shore, cross-shelf, eddies, fronts, filaments, blue

-Can water mass characterization of the representing different bio-physical processes be defined using VIIRS bio-optical products in the a dynamic system such as the Gulf Stream Stream?

