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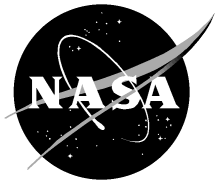

SeaWiFS Postlaunch Technical Report Series

Stanford B. Hooker and Elaine R. Firestone, Editors

Volume 29, SeaWiFS Postlaunch Technical Report Series Final Cumulative Index

Elaine R. Firestone and Stanford B. Hooker

National Aeronautics and
Space Administration

Goddard Space Flight Center
Greenbelt, Maryland 20771

March 2004

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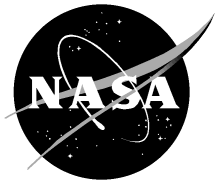

SeaWiFS Postlaunch Technical Report Series

Stanford B. Hooker, Editor
NASA Goddard Space Flight Center, Greenbelt, Maryland

Elaine R. Firestone, Senior Scientific Technical Editor
Science Applications International Corporation, Beltsville, Maryland

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Elaine R. Firestone
Science Applications International Corporation, Beltsville, Maryland

Stanford B. Hooker
NASA Goddard Space Flight Center, Greenbelt, Maryland

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Preface

In 1992, the first volume of the SeaWiFS Technical Report Series (STRS) was published. Twelve years and 72 volumes later, the STRS has come to an end with this volume, Volume 29, of the Postlaunch Series. To my knowledge, there has not been a comparable set of documentation for any NASA mission. We have labored diligently to document the SeaWiFS Project as completely as possible as a service to the research community and to provide our experience to those pursuing ocean color missions and the production of climate data products in the future. All volumes have been mailed to those who have requested to be on the Project's distribution list (over 450 individuals, and academic and scientific institutions). All volumes (of both the Pre- and Postlaunch Series) are now posted electronically as downloadable PDF files on the SeaWiFS home page. Elaine Firestone and Stan Hooker, the editors, have set and sustained an exceptional documentation standard in terms of quality and consistency throughout the series. In fact, this achievement was officially recognized by NASA in 2003 when the SeaWiFS Data Analysis System (SeaDAS) and STRS groups received a NASA Public Service Group Achievement Award. All good things, however, come to an end sooner or later. On behalf of the SeaWiFS Project, I would like to thank all who have contributed to the STRS. It represents an accomplishment we can all be proud of.

Greenbelt, Maryland
March 2004

— C. R. McClain
SeaWiFS Project Scientist

Abstract

The Sea-viewing Wide Field-of-view Sensor (SeaWiFS) is the follow-on ocean color instrument to the Coastal Zone Color Scanner (CZCS), which ceased operations in 1986, after an eight-year mission. SeaWiFS was launched on 1 August 1997, onboard the OrbView-2 satellite, built by Orbital Sciences Corporation (OSC). The SeaWiFS Project at the National Aeronautics and Space Administration (NASA) Goddard Space Flight Center (GSFC), undertook the responsibility of documenting all aspects of this mission, which is critical to the ocean color and marine science communities. The start of this documentation was titled the *SeaWiFS Technical Report Series,* which ended after 43 volumes were published. A follow-on series was started, titled the *SeaWiFS Postlaunch Technical Report Series.* This particular volume of the so-called *Postlaunch Series* serves as a reference, or guidebook, to the previous 28 volumes, i.e., the entire Postlaunch Series, and consists of 4 sections including an errata, an index to key words and phrases, a list of acronyms used, and a list of all references cited. The editors published a cumulative index of this type after every five volumes.

1. INTRODUCTION

This is the fifth, and final volume, in a series of cumulative indexes, published as a separate volume in the *SeaWiFS Postlaunch Technical Report Series,* and includes information found in the previous 28 volumes of the series. The *SeaWiFS Postlaunch Technical Report Series* has been written under National Aeronautics and Space Administration (NASA) Technical Memorandum (TM) numbers 1998–206892, 1999–206892, and so on, up to the present numbering of 2004–206892, with the year part of the TM number changing with each calendar year of its existence. The volume numbers, authors, and titles of the volumes covered in this index are the following:

Vol. 1: Johnson, B.C., J.B. Fowler, and C.L. Cromer, *The SeaWiFS Transfer Radiometer (SXR).*

Vol. 2: Aiken, J., D.G. Cummings, S.W. Gibb, N.W. Rees, R. Woodd-Walker, E.M.S. Woodward, J. Woolfenden, S.B. Hooker, J-F. Berthon, C.D. Dempsey, D.J. Suggett, P. Wood, C. Donlon, N. González-Benítez, I. Huskin, M. Quevedo, R. Barciela-Fernandez, C. de Vargas, and C. McKee, *AMT-5 Cruise Report.*

Vol. 3: Hooker, S.B., G. Zibordi, G. Lazin, and S. McLean, *The SeaBOARR-98 Field Campaign.*

Vol. 4: Johnson, B.C., E.A. Early, R.E. Eplee, Jr., R.A. Barnes, and R.T. Caffrey, *The 1997 Prelaunch Radiometric Calibration of SeaWiFS.*

Vol. 5: Barnes, R.A., R.E. Eplee, Jr., S.F. Biggar, K.J. Thome, E.F. Zalewski, P.N. Slater, and A.W. Holmes, *The SeaWiFS Solar Radiation-Based Calibration and the Transfer-to-Orbit Experiment.*

Vol. 6: Firestone, E.R., and S.B. Hooker, *SeaWiFS Postlaunch Technical Report Series Cumulative Index: Volumes 1–5.*

Vol. 7: Johnson, B.C., H.W. Yoon, S.S. Bruce, P-S. Shaw, A. Thompson, S.B. Hooker, R.E. Eplee, Jr., R.A. Barnes, S. Maritorena, and J.L. Mueller, *The Fifth SeaWiFS Intercalibration Round-Robin Experiment (SIRREX-5), July 1996.*

Vol. 8: Hooker, S.B., and G. Lazin, *The SeaBOARR-99 Field Campaign.*

Vol. 9: McClain, C.R., E.J. Ainsworth, R.A. Barnes, R.E. Eplee, Jr., F.S. Patt, W.D. Robinson, M. Wang, and S.W. Bailey, *SeaWiFS Postlaunch Calibration and Validation Analyses, Part 1.*

Vol. 10: McClain, C.R., R.A. Barnes, R.E. Eplee, Jr., B.A. Franz, N.C. Hsu, F.S. Patt, C.M. Pietras, W.D. Robinson, B.D. Schieber, G.M. Schmidt, M. Wang, S.W. Bailey, and P.J. Werdell, *SeaWiFS Postlaunch Calibration and Validation Analyses, Part 2.*

Vol. 11: O'Reilly, J.E., and 24 Coauthors, *SeaWiFS Postlaunch Calibration and Validation Analyses, Part 3.*

Vol. 12: Firestone, E.R., and S.B. Hooker, *SeaWiFS Postlaunch Technical Report Series Cumulative Index: Volumes 1–11.*

Vol. 13: Hooker, S.B., G. Zibordi, J-F. Berthon, S.W. Bailey, and C.M. Pietras, *The SeaWiFS Photometer Revision for Incident Surface Measurement (SeaPRISM) Field Commissioning.*

Vol. 14: Hooker, S.B., H. Claustre, J. Ras, L. Van Heukelem, J-F. Berthon, C. Targa, D. van der Linde, R. Barlow, and H. Sessions, *The First SeaWiFS HPLC Analysis Round-Robin Experiment (SeaHARRE-1).*

Vol. 15: Hooker, S.B., G. Zibordi, J-F. Berthon, D. D'Alimonte, S. Maritorena, S. McLean, and J. Sildam, *Results of the Second SeaWiFS Data Analysis Round Robin, March 2000 (DARR-00).*

Vol. 16: Patt, F.S., *Navigation Algorithms for the SeaWiFS Mission.*

Vol. 17: Hooker, S.B., S. McLean, J. Sherman, M. Small, G. Lazin, G. Zibordi, and J.W. Brown, *The Seventh SeaWiFS Intercalibration Round-Robin Experiment (SIRREX-7), March 1999.*

Vol. 18: Firestone, E.R., and S.B. Hooker, *SeaWiFS Postlaunch Technical Report Series Cumulative Index: Volumes 1–17.*

Vol. 19: Zibordi, G., J-F. Berthon, J.P. Doyle, S. Grossi, D. van der Linde, C. Targa, and L. Alberotanza, *Coastal Atmosphere and Sea Time Series (CoASTS), Part 1: A Tower-Based Long-Term Measurement Program.*

Vol. 20: Berthon, J-F., G. Zibordi, J.P. Doyle, S. Grossi, D. van der Linde, and C. Targa, *Coastal Atmosphere and Sea Time Series (CoASTS), Part 2: Data Analysis.*

Vol. 21: Zibordi, G., D. D'Alimonte, D. van der Linde, J-F. Berthon, S.B. Hooker, J.L. Mueller, G. Lazin, and S. McLean, *The Eighth SeaWiFS Intercalibration Round-Robin Experiment (SIRREX-8), September–December 2001.*

Vol. 22: Patt, F.S., R.A. Barnes, R.E. Eplee, Jr., B.A. Franz, W.D. Robinson, G.C. Feldman, S.W. Bailey J. Gales, P.J. Werdell, M. Wang, R. Frouin, R.P. Stumpf, R.A. Arnone, R.W. Gould, Jr., P.M. Martinolich, V. Ransibrahmanakul, J.E. O'Reilly, and J.A. Yoder, *Algorithm Updates for the Fourth SeaWiFS Data Reprocessing.*

Vol. 23: Hooker, S.B., G. Zibordi, J-F. Berthon, D. D'Alimonte, D. van der Linde, and J.W. Brown, *Tower-Perturbation Measurements in Above-Water Radiometry.*

Vol. 24: Firestone, E.R., and S.B. Hooker, *SeaWiFS Postlaunch Technical Report Series Cumulative Index: Volumes 1–23.*

Vol. 25: Doyle, J.P., S.B. Hooker, G. Zibordi, and D. van der Linde, *Validation of an In-Water, Tower-Shading Correction Scheme.*

Vol. 26: Zibordi, G., D. D'Alimonte, D. van der Linde, S.B. Hooker, and J.W. Brown, *New Laboratory Methods for Characterizing the Immersion Factors of Irradiance Sensors.*

Vol. 27: Barlow, R., H. Sessions, N. Silulwane, H. Engel, S.B. Hooker, J. Aiken, J. Fishwick, V. Vicente, A. Morel, M. Chami, J. Ras, S. Bernard, M. Pfaff, J.W. Brown, and A. Fawcett, *BENCAL Cruise Report.*

Vol. 28: Bilanow, S., and F.S. Patt, *Pointing Performance for the SeaWiFS Mission.*

Vol. 29: Firestone, E.R., and S.B. Hooker, *SeaWiFS Postlaunch Technical Report Series Final Cumulative Index.*

This volume serves as a reference, or guidebook, to the preceding volumes of the so-called *Postlaunch Series.* It consists of three main sections: a cumulative index to key words and phrases, a glossary of acronyms, and a bibliography of all references cited in the series. An errata section has been added to address issues and needed corrections which have come to the editors' attention since the volumes were first published. In addition, because this is the final volume published, the editors have included at the end of this report, a listing of all volumes published in the *Prelaunch Series,* as well as the Postlaunch Series.

The nomenclature of the index section is a familiar one, in the sense that it is a sequence of alphabetical entries, but it uses a unique format because multiple volumes are involved. Unless indicated otherwise, the index entries refer to some aspect of the SeaWiFS Project or instrument. An index entry is composed of a keyword or phrase followed by an entry field that directs the reader to the possible locations where a discussion of the keyword can be found. The entry field is normally made up of a volume identifier shown in bold face, followed by a page identifier, which is always enclosed in parentheses:

keyword, **volume**(pages).

If an entry is the subject of an entire volume, the volume field is shown in slanted type without a page field:

keyword, *Vol. #.*

An entry can also be the subject of a complete chapter. In this instance, both the volume number and chapter number appear without a page field:

keyword, **volume**(ch. #).

Figures or tables that provide particularly important summary information are also indicated as separate entries in the page field—even if they fall within an already specified page range. In this case, the figure or table number is given with the page number on which it appears:

keyword, **volume**(Fig. # *p.* #),

or

keyword, **volume**(Table # *p.* #).

Furthermore, because of the recursive nature of various topics, an index subentry may be repeated at the bottom of a main heading with the "*see also*" nomenclature. This directs the reader to a main entry elsewhere in the index for a more in-depth treatment of the topic.

2. ERRATA

Since the issuance of previous volumes, one of the references cited changed its publication status, e.g., it has gone from "submitted" to "in press." Listed below is the reference in question as it was cited in one or more of the first 28 volumes in the series, along with how it now appears in the references section of *this* volume.

Original Citation

Claustre, H., S.B. Hooker, L. Van Heukelem, J-F. Berthon, R. Barlow, J. Ras, H. Sessions, C. Targa, C.S. Thomas, D. van der Linde, and J-C. Marty, 2003: An intercomparison of HPLC phytoplankton methods using *in situ* samples: Application to remote sensing and database activities. *Mar. Chem.,* (submitted).

Revised Citation

Claustre, H., S.B. Hooker, L. Van Heukelem, J-F. Berthon, R. Barlow, J. Ras, H. Sessions, C. Targa, C.S. Thomas, D. van der Linde, and J-C. Marty, 2004: An intercomparison of HPLC phytoplankton methods using *in situ* samples: Application to remote sensing and database activities. *Mar. Chem.,* **85,** 41–61.

Cumulative Index

Unless otherwise indicated, the index entries that follow refer to some aspect of the SeaWiFS instrument or Project.

– B –

– C –

– D –

– T –

Glossary

6S Not an acronym, but an atmospheric photochemical and radiative transfer model.

– A –

A/D Analog-to-Digital
AAOT *Acqua Alta* Oceanographic Tower
AATSR Advanced Along Track Scanning Radiometer
AC Alternating Current
AC-9 Absorption and Attenuation Meter
ACC Advanced Cosine Collector
ACE Attitude Control Electronics
ACE-A Primary ACE box.
ACE-B Backup, or redundant, ACE box.
ACS Average Calibration Slope or Attitude Control System (depending on usage).
ADCP Acoustic Doppler Current Profiler
ADEOS Advanced Earth Observing Satellite
AERONET Aerosol Robotic Network
AI Absorbing Aerosol Index
AI9901 Atlantic–Indian Ocean Cruise, 1999
ALOHA A Long-term Oligotrophic Habitat Assessment
AMJ April–May–June
AMT Atlantic Meridional Transect
AMT-1 The first AMT cruise
AMT-2 The second AMT cruise
AMT-3 The third AMT cruise
AMT-5 The fifth AMT cruise
AMT-6 The sixth AMT cruise
AMT-8 The eighth AMT cruise
AOP Apparent Optical Property
AOPs Apparent Optical Properties
AOS Acquisition of Signal
AOT Aerosol Optical Thickness
APD Absolute Percent Difference
ARC Advanced Radiance Collector
ARGOS Not an acronym, but the name given to the data collection and location system on the NOAA operational satellites.
ASAP Artificial Satellite Analysis Program
ASCII American Standard Code for Information Interchange
ASD Analytical Spectral Devices
ASTER Advanced Spaceborne Thermal Emission and Reflection Radiometer
ASTM American Society for Testing and Materials
ATA Ambient Temperature Plate Assembly
ATSR Along-Track Scanning Radiometer
AU Astronomical Unit
AVHRR Advanced Very High Resolution Radiometer

– B –

BAS British Antarctic Survey
BATS Bermuda Atlantic Time-series Study
BB-6 HydroSCAT-6 (backscattering instrument)
BBOP Bermuda BioOptics Project
BCD Binary Coded Decimal
BCR Battery Charge Regulator
BENCAL Benguela Calibration (and Validation)
BENEFIT Benguela Environment Fisheries Interaction and Training
Ber95 Bering Sea Cruise, 1995
Ber96 Bering Sea Cruise, 1996
BIO Bedford Institute of Oceanography
BNC Bayonet Nut Connector
BNL Brookhaven National Laboratory
BOPSII Bio-Optical Profiling System II (second generation)
BOUSSOLE *Bouée pour l'acquisition de Séries Optiques à Long Terme* (buoy for the acquisition of a long-term optical series).
BPA Back Plate Assembly
BRDF Bidirectional Reflectance Distribution Function
BSI Biospherical Instruments, Inc.
BSST Bulk Sea Surface Temperature
BTBM Bermuda Test Bed Mooring

– C –

C/CSC NOAA Coastal Services Center, Charleston, South Carolina
CalCOFI California Cooperative Fisheries Institute
CANIGO Canary Islands, Azores, Gibraltar Observations
CARIACO Carbon Retention in a Colored Ocean
CB-MAB Chesapeake Bay–Middle Atlantic Bight
CC Cloud Cover
CCAR Colorado Center for Astrodynamics Research
CCD Charge-Coupled Device
CCMS Centre for Coastal and Marine Studies
CCN Cloud Condensation Nucleii
CCPO Center for Coastal Physical Oceanography
CDOM Colored Dissolved Organic Matter
CEC Commission of the European Communities
CERT Calibration Evaluation and Radiometric Testing
C-FALLS Combined (software package for logging) Sea-FALLS data
CHN Carbon-Hydrogen-Nitrogen
CHORS Center for Hydro-Optics and Remote Sensing
C-mount Not an acronym, but a mounting system for camera lenses.
CNR *Consiglio Nazionale delle Ricerche* (the Italian National Research Council)
CNRS *Centre National de la Recherche Scientifique* (the French National Institute of Scientific Research)
COARE Coupled Ocean Atmosphere Response Experiment
CoASTS Coastal Atmosphere and Sea Time Series
CoBOP Coastal Benthic Optical Properties (Bahamas)
COLORS Coastal Region Long-Term Measurements for Colour Remote Sensing Development and Validation
ComPACT Compact Portable Advanced Characterization Tank
C-OPS Combined (software package for logging) Sea-OPS data.
COSMIC Computer Software Management and Information Center
COTS Commercial Off-The-Shelf
CSC Coastal Service Center
CSH UNIX "C-shell" (script programming utility)
CSIRO Commonwealth Scientific and Industrial Research Organisation
CT Cylindrical Tube or Conductivity and Temperature (depending on usage).

CTD Conductivity, Temperature, and Depth
CV Coefficient of Variation
CVE Calibration and Validation Element
CVT Calibration and Validation Team
CZCS Coastal Zone Color Scanner

– D –

DAAC Distributed Active Archive Center
DAD Diode Array Detector
DalBOSS Dalhousie Buoyant Optical Surface Sensor
DalSAS Dalhousie SeaWiFS Aircraft Simulator
DARR Data Analysis Round-Robin
DARR-94 The first DARR (1994)
DARR-00 The Second DARR (March 2000)
DAS Data Acquisition Sequence
DATA Not an acronym, but a designator for the Satlantic, Inc., series of power and telemetry units.
DATA-100 (Satlantic) Data (acquisition) Series 100 (unit)
dc Direct Current
DC Direct Current
DCC Dark Current Correction
DCM Deep Chlorophyll Maximum or Depth of the Chlorophyll Maximum (depending on usage).
DCP Data Collection Platform
DHI DHI Water and Environment Institute (Denmark)
DIN *Deutsche Industrie-Normen* (German industry standards)
DIO Digital Input-Output
DIR Not an acronym, but a designator for the Satlantic, Inc., series of directional units.
DMA Dimethylamine
DMM Digital Multimeter
DMS Dimethylsulfide
DMSP Dimethylsulphoniopropionate
DMSPd Dissolved DMSP
DMSPp DMSP within phytoplankton cells
DNA Deoxyribonucleic Acid
DO Deep Ocean
DOC Dissolved Organic Carbon
DOP Dilution of Precision
DP Diagnostic Pigments
DPA Detector Plate Assembly
DSS Digital Sun Sensor
DSS-A Digital Sun Sensor-A, the front-mounted sensor.
DSS-B Digital Sun Sensor-B, the back-mounted sensor.
DSS-C Digital Sun Sensor-C, the top-mounted sensor.
DU Dobson Unit (of total ozone)
DUT Device Under Test
DVM Digital Voltmeter
DYF DYFAMED
DYFAMED *Dynamique des Flux en Méditerranée* (Dynamics of fluxes in the Mediterranean)

– E –

E East
ECEF Earth-Centered Earth-Fixed
ECI Earth-Centered Inertial
EcoHAB Ecology of Harmful Algal Blooms
ECR Earth-Centered Rotating
EDTA Ethylenediaminetetraacetic Acid
EEPROM Electronically Erasable Programmable Read-Only Memory
EEZ Exclusive Economic Zone
e-mail Electronic Mail
ENVISAT Environmental Satellite
EOF End-of-File
EOS Earth Observing System
EP Entrance Pupil
EqPac Equatorial Pacific
ERS-2 The Second Earth Resources Satellite
ESA European Space Agency
ET Eutrophic
ETOPO2 Earth Topography 2 min grid
ETOPO5 Earth Topography 5 min grid
EU European Union
EUC Equatorial Under Current

– F –

FAFOV Full-Angle Field of View
FARCAL Facility for Advanced Radiometric Calibrations
FASCAL Facility for Automated Spectroradiometric Calibrations
FEL Not an acronym, but a lamp designator.
FET Field-Effect Transistor
FF Free-Fall
FFT Fast Fourier Transform
FIGD-IC Flow Injection Gas-Diffusion Coupled to Ion Chromatography
FlatSat Not an acronym, but a laboratory-bench spacecraft simulator—a shortened way of saying "Flat Satellite."
FL-Cuba Florida–Cuba (cruise)
F-mount Not an acronym, but a mounting system for camera lenses.
FORTRAN Formula Translation (computer language)
FOV Field of View
FRRF Fast Repetition Rate Fluorometer
FRS Fisheries Research Ship
FS Field Stop
FWHM Full-Width at Half-Maximum

– G –

GAC Global Area Coverage
GF Glass Fiber (Filter)
GF/F Not an acronym, but a specific type of glass fiber filter manufactured by Whatman.
GIM Ground Interface Model
GLI Global Imager
GLOBEC Global Ocean System Eco-Dynamics
GMT Greenwich Mean Time
GoA97 Gulf of Alaska 1997 (cruise)
GoCal Gulf of California
GOES-8 The Eighth Geostationary Operational Environmental Satellite
GOM Gulf of Maine
GPIB General Purpose Interface Bus
GPS Global Positioning System
GS GSFC and Satlantic (comparison)
GSE Ground Support Equipment
GSFC Goddard Space Flight Center
GST Greenwich Sidereal Time
GUI Graphical User Interface

– H –

HACR High-Accuracy Cryogenic Radiometer
HDF Hierarchical Data Format
HDS Horizontal Deployment System
HEPA High Efficiency Particle Arrestor
HMS Her Majesty's Ship
HOBI Hydro-Optics, Biology, and Instrumentation (Laboratories)
HOT Hawaii Optical Time-series
HP Hewlett-Packard
HPL Horn Point Laboratory
HPLC High Performance Liquid Chromatography
HRPT High Resolution Picture Transmission
HS Horizon Scanner
HS-A Horizon Scanner-A
HS-B Horizon Scanner-B
HTCO High Temperature Catalytic Oxidation
H-TSRB Hyperspectral-Tethered Surface Radiometer Buoy

– I –

IAD Ion-Assisted Beam Deposition
IAPSO International Association for the Physical Sciences of the Ocean
IC Integrated Circuit
ICESS Institute for Computational Earth System Science
ID Identification or Inside Diameter (depending on usage).
IDL International Date Line or Interactive Data Language (depending on usage).
IEEE Institute of Electrical and Electronic Engineers
IES Institute for Environment Sustainability
IF Interference Filter
IGRF International Geomagnetic Reference Field
ILX Not an acronym, but part of the name of ILX Lightwave Corporation of Bozeman, Montana.
IMSL International Mathematical and Statistical Libraries
INSU *Institut National des Sciences de l'Univers* (the French National Institute of the Science of the Universe)
IOCCG International Ocean Colour Coordinating Group
IOP Inherent Optical Property
IOPs Inherent Optical Properties
IOS (SOC) Institute of Oceanographic Sciences
IQR Interquartile Range
IS Internal Standard
ISDGM *Istituto per lo Studio della Dinamica delle Grandi Masse* (Institute for the Study of Dynames of Large Masses)
ISIC Integrating Sphere Irradiance Collector

– J –

JAS July–August–September
JCR (RRS) *James Clark Ross*
JES9906 Japan East Sea Cruise, 1999-06
JFM January–February–March
JG JRC and GSFC (comparison)
JGOFS Joint Global Ocean Flux Study
JRC Joint Research Centre
JS JRC and Satlantic (comparison)
JUL98NAN A NOAA-sponsored cruise off Nantucket Island, Massachusetts in July 1998.

– K –

KMR K from Multiresolution (wavelet analysis)

– L –

L1 Level-1 SeaWiFS data product
L1A Level-1a SeaWiFS data product with navigation information
L2 Level-2 SeaWiFS data product
L3 Level-3 SeaWiFS data product
Lab96 Labrador Sea Cruise, 1996
Lab97 Labrador Sea Cruise, 1997
Lab98 Labrador Sea Cruise, 1998
LAC Local Area Coverage
LANDSAT Land Satellite
LDDS Long Distance Deployment System
LLR Low Level Radiance
LN LoCNESS
LoCNESS Low-Cost NASA Environmental Sampling System
LOS Loss of Signal
LOV *Laboratoire d'Océanographie de Villefranche* (Oceanographic Laboratory of Villefranche)
LPCM *Laboratoire de Physique et Chimie Marines* (Laboratory of Marine Physics and Chemistry)
LS Light Stability
LSB Least Significant Bit
LTER Long Term Ecological Research
LUT Look-Up Table
LXR LANDSAT Transfer Radiometer

– M –

MA Methylamine
MAVT MERIS and AATSR Validation Team
MBARI Monterey Bay Aquarium Research Institute
MBR Maximum Band Ratio
MC Monte Carlo
MCM Marine and Coastal Management (South Africa)
MCP Modified Cubic Polynomial
MER Marine Environmental Radiometer
MERIS Medium Resolution Imaging Spectrometer
METEOSAT Meteorological Satellite
MF0796 R/V *Miller Freeman* Cruise, 1996-07
MFR-6 Multi-Filter Rotating Shadow-Band Radiometer
microNESS micro NASA Environmental Sampling System
microPRO micro Profiler
microSAS micro Surface Acquisition System
miniNESS miniature NASA Environmental Sampling System
MIO *Mer Ionienne* (Ionian Sea)
MISR Multiangle Imaging Spectroradiometer
MLD Mixed Layer Depth
MLML Moss Landing Marine Laboratory
MMA Mirror Mount Assembly or Monomethylamine (depending on usage).
MN miniNESS
MOBY Marine Optical Buoy
MOCE Marine Optical Characterization Experiment
MODIS Moderate Resolution Imaging Spectroradiometer
MODIS-A MODIS on the Aqua spacecraft
MODIS-T MODIS on the Terra spacecraft

MODTRAN Not an acronym, but an atmospheric photochemical and radiative transfer model.
MOS Modular Optoelectronic Scanner (spaceborne sensor) or Marine Optical Spectroradiometer (depending on usage).
MREN *Maison de la Recherche en Environnement Naturel*
MSB Most Significant Bit
MT Mesotrophic
MVDS Multichannel Visible Detector System

– N –

N North
NABE North Atlantic Bloom Experiment
NAd North Adriatic (Current)
NASA National Aeronautics and Space Administration
NASDA National Space Development Agency (Japan)
NCEP National Center for Environmental Prediction
NCSA National Center for Supercomputing Applications
NDVI Normalized Difference Vegetation Index
NEC Northeast US Coastal Ecosystem or the present name (not an acronym) for the Nippon Electric Company (Japan), depending on usage.
NECC North Equatorial Counter Current
NEGOM Northeast Gulf of Mexico
NEUC North Equatorial Undercurrent
NIR Near-Infrared
NIST National Institute of Standards and Technology
NOAA National Oceanic and Atmospheric Administration
NR Not Resolved
NRL Naval Research Laboratory
NRSR Normalized Remote Sensing Reflectance
NSD Normalized Standard Deviation

– O –

OC Ocean Color
OC2 Ocean Chlorophyll 2 (algorithm)
OC2v1 OC2 version 1
OC2v2 OC2 version 2
OC2v4 Ocean Chlorophyll 2 (algorithm) version 4
OC4 Ocean Chlorophyll 4 (algorithm)
OC4v2 OC4 version 2
OC4v3 OC4 version 3
OC4v4 OC4 version 4
OCI Ocean Color Irradiance (sensor)
OCI-200 Ocean Color Irradiance series 200 (sensor)
OCP Ocean Color Profiler
OCR Ocean Color Radiance (sensor)
OCR-200 Ocean Color Radiance series 200 (sensor)
OCR-250 Ocean Color Radiance Series 250 (sensor)
OCR-504 OCR series-504 (four-channel, digital sensor)
OCR-507 OCR series-507 (seven-channel, digital sensor)
OCR-1000 Ocean Color Radiance Series 1000 (sensor)
OCR-2000 Ocean Color Radiance Series 2000 (sensor)
OCTS Ocean Color Temperature Scanner
OD Outside Diameter
OL Optronic Laboratories, Inc.
OLL One-Percent Light Level
OND October–November–December
OPC Optical Plankton Counter
OrbView-2 Not an acronym, but the current name for the SeaStar satellite.
ORINOCO Orinoco River Plume
OSC Orbital Sciences Corporation
OT Oligotrophic
OV2 OrbView-2

– P –

PAR Photosynthetically Available Radiation
PC Personal Computer or Percent Contribution Ratio (depending on usage).
PCR Polymerase Chain Reaction
PD Percent Difference
PI Principal Investigator
P-I Photosynthesis-Irradiance
PID Proportional, Integral, Differential
PlyMBODy Plymouth Marine Bio-Optical Data Buoy
PM Particulate Matter
PML Plymouth Marine Laboratory
PNF Profiling Natural Fluorescence
POC Particulate Organic Carbon
POLDER Polarization Detecting Environmental Radiometer
PPF Pump and Probe Fluorometer
PPS Pulse Per Second
PQE Photosynthetic Quantum Efficiency
PRE Percent Relative Error
PRIME Plankton Reactivity in the Marine Environment
PRO-DCU Not an acronym, but a designator for the Satlantic, Inc., series of 48–76 V deck boxes.
PROSOPE *Productivité des Systèmes Océaniques Pélagiques* (Productivity of Pelagic Oceanic Systems)
PRR Profiling Reflectance Radiometer
PRT Platinum Resistance Temperature (sensor)
PS Power Supply
PS2 Photosystem 2
PSD Particle Size Distribution
PSM Payload Support Module
PST Pacific Standard Time
PSU Practical Salinity Units
PTFE Polytetrafluoroethylene
PVC Polyvinylchloride

– Q –

QC Quality Control

– R –

R/V Research Vessel
RAAN Right Ascension of Ascending Node
RAM Random Access Memory
RAMSES Radiation Measurement Sensor with Enhanced Spectral Resolution
RE Ramsden Eyepiece
RED9503 Red Tide Cruise, 1995-03
Res94 Resolute Cruise, 1994
Res95-2 Resolute Cruise, 1995
Res96 Resolute Cruise, 1996
Res98 Resolute Cruise, 1998
RF Response Factor
RH Relative Humidity
RL Relay Lens

RMA Reduced Major Axis
RMS Root Mean Squared
RMSD Root Mean Square Difference
RMSrd Root Mean Square of relative difference
ROAVERRS Research on Ocean–Atmosphere Variability and Ecosystem Response in the Ross Sea
ROLO Robotic Lunar Observatory
ROSSA Radiometric Observations of the Sea Surface and Atmosphere
RPD Relative Percent Difference
RPO Revolutions Per Orbit
RRS Royal Research Ship
RSG (PML) Remote Sensing Group
RSMAS Rosenstiel School for Marine and Atmospheric Science
RSR Relative Spectral Response
RSS Root-Sum Square
RTC Real Time Clock
RTV Room Temperature Vulcanizing
RVS (BAS) Research Vessel Services

– S –

S South
S/N Serial Number
S/CSC Stennis (Space Center) Coastal Services Center
S/NRL Stennis Space Center, Naval Research Laboratory
SAA South Atlantic Anomaly
SACZ Sub-Antarctic Convergence Zone
SAI Space Applications Institute
SAS Surface Acquisition System
SAS-II Satlantic Airborne Sensor
SAT Short Along-Track (station)
SatView The Satlantic data acquisition and visualization software package.
SBE Sea-Bird Electronics
SBRC Santa Barbara Research Center (Raytheon)
SBRS Santa Barbara Remote Sensing (Hughes)
SBUV Solar Backscatter Ultraviolet Radiometer
SC Shallow Coastal
SCM Spacecraft Control Module
SCOR Scientific Committee on Oceanographic Research
SDSU San Diego State University
SDY Sequential Day of the Year
SeaACE SeaWiFS Atlantic Characterization Experiment
SeaARCS SeaWiFS Advanced Radiometer Control System
SeaBAM SeaWiFS Bio-optical Algorithm Mini-workshop
SeaBASS SeaWiFS Bio-Optical Archive and Storage System
SeaBOARR SeaWiFS Bio-Optical Algorithm Round-Robin
SeaBOARR-98 The First SeaBOARR (1998)
SeaBOARR-99 The Second SeaBOARR (1999)
SeaBOARR-00 The Third SeaBOARR (April–May 2000)
SeaBOARR-01 The Fourth SeaBOARR (June 2001)
SeaBOARR-02 The Fifth SeaBOARR (June 2002)
SeaBOSS SeaWiFS Buoyant Optical Surface Sensor
SeaDAS SeaWiFS Data Analysis System
SeaFALLS SeaWiFS Free-Falling Advanced Light Level Sensors
SeaHARRE SeaWiFS HPLC Analysis Round-Robin Experiment
SeaHARRE-1 The first SeaHARRE
SeaHARRE-2 The second SeaHARRE
SeaLaMP SeaWiFS Lamp Monitoring and Performance
SeaOPS SeaWiFS Optical Profiling System
SeaPRISM SeaWiFS Photometer Revision for Incident Surface Measurement
SeaSAS SeaWiFS Surface Acquisition System
SeaSHADE SeaWiFS Shadow Band (radiometer)
SeaStar Not an acronym, but the former name of the satellite on which SeaWiFS was launched, now known as OrbView-2.
SeaSURF SeaWiFS Square Underwater Reference Frame
SeaWiFS Sea-viewing Wide Field-of-view Sensor
SEC South Equatorial Current
SEM Scanning Electronic Microscopy
SEU Single-Event Upset
SEUC South Equatorial Undercurrent
SIAP *Societa Italiana Apparecchi di Precisione*
SIFS Satlantic Instrument Files Standard
SIMBAD Satellite Validation for Marine Biology and Aerosol Determination
SIMBIOS Sensor Intercomparison and Merger for Biological and Interdisciplinary Oceanic Studies
SIO Scripps Institution of Oceanography
SIRCUS Spectral Irradiance and Radiance Calibrations with Uniform Standards
SIRREX SeaWiFS Intercalibration Round-Robin Experiment
SIRREX-1 The first SIRREX (July 1992)
SIRREX-2 The second SIRREX (June 1993)
SIRREX-3 The third SIRREX (September 1994)
SIRREX-4 The fourth SIRREX (May 1995)
SIRREX-5 The fifth SIRREX (July 1996)
SIRREX-6 The sixth SIRREX (August–December 1997)
SIRREX-7 The seventh SIRREX (March 1999)
SIRREX-8 The eighth SIRREX (September–December 2001)
SIS Spherical Integrating Source
SMAB Southern Mid-Atlantic Bight
SMSR SeaWiFS Multichannel Surface Reference
SNR Signal-to-Noise Ratio
SO SeaOPS
SOC Southampton Oceanography Centre
SOH State of Health
SOMARE Sampling, Observations and Modelling of Atlantic Regional Ecosystems
SOOP SeaWiFS Ocean Optics Protocols
SOSSTR Ship of Opportunity Sea Surface Temperature Radiometer
SPM Suspended Particulate Matter
SPMR SeaWiFS Profiling Multichannel Radiometer
SPO SeaWiFS Project Office
SQM SeaWiFS Quality Monitor
SQM-II The Second Generation SQM
SRF Spectral Response Function
SS Sea State
SSE Size-of-Source Effect
SSH Sea Surface Height
SSM/I Special Sensor for Microwave/Imaging
SSST Sea Surface Skin Temperature
SUnSAS SeaWiFS Underway Surface Acquisition System
SXR SeaWiFS Transfer Radiometer

– T –

T Transmission method for spectrophotometric analysis.
T/N Temporary (identification) Number
TAM Three-Axis Magnetometer
TAM-A Three-Axis Magnetometer, A
TAM-B Three-Axis Magnetometer, B
TAO Tropical Atmosphere–Ocean
TBAA Tetrabutyl Ammonium Acetate
TEC Thermoelectric Cooler
THOR Three-Headed Optical Recorder
TIROS Television Infrared Observation Satellite
TMA Trimethylamine
TOA Top of the Atmosphere
TOC Total Organic Carbon
TOGA Tropical Ocean Global Atmosphere
TOMS Total Ozone Mapping Spectrometer
T-R Transmission-Reflection (method for spectrophotometric analysis)
TSM Total Suspended Matter
TOPEX Topography Experiment
TOTO Tongue of the Ocean (Bahamas)
TOVS TIROS Operational Vertical Sounder
TSG Thermosalinograph
TSM Total Suspended Matter
TSP Thermo Separation Products
TTL Transistor–Transistor Logic

– U –

UA University of Arizona
UCSB University of California, Santa Barbara
UCT University of Cape Town
UIC Underway Instrumentation and Control
UK United Kingdom
ULCO *Université du Littoral Côte d'Opale*
UM University of Miami
UMCES University of Maryland Center for Environmental Science
UNC Unified Course
UNESCO United Nations Educational, Scientific, and Cultural Organization
UOR Undulating Oceanographic Recorder
UPD Unbiased Percent Difference
UPS Uninterruptable Power Supply
UPW Upwelling
URL Universal Resource Locator
USF University of South Florida
USGS United States Geological Survey
USN United States Navy
UTC Coordinated Universal Time (definition reflects actual usage instead of following the letters of the acronym).
UV Ultraviolet
UVA Ultraviolet-A

– V –

V1 Version 1
V2 Version 2
V3 Version 3
V4 Version 4
V5 Version 5
VAFB Vandenberg Air Force Base
VisSCF Visible Spectral Comparator Facility (NIST)
VKI VKI Institute for Water Environment (Denmark)
VXR Visible Transfer Radiometer

– W –

W West
WC Winch and Crane
WETLabs Western Environmental Technology Laboratories (Inc.)
WG Working Group
WiSPER Wire-Stabilized Profiling Environmental Radiometer
WM Spherical Mirror Wedge Section
WMO World Meteorological Organization
WOCE World Ocean Circulation Experiment
WP WiSPER
WS Wind Speed
WSSC Washington Suburban Sanitary Commission

– X –

XBT Expendable Bathythermograph
XOTD Expendable Optical, Temperature, and Depth

– Y, Z –

YB71 Not an acronym, but a type of paint for solar diffusers.
YBOM Yamato Bank Optical Mooring (Japan)
YES Yankee Environmental Systems (Inc.)

References

– A –

Aas, E., 1981: The refractive index of phytoplancton. *Institute for Geophysikk Report Series, No. 46,* Oslo University, 61 pp.

Aiken, J., 2001: Fluorometry as a Biological Sensor. In: *Encyclopaedia of Ocean Sciences.* J.H. Steele, K.K. Turekian and S.A. Thorpe, Eds., Academic Press, San Diego, California, 1,073–1,081.

——, G.F. Moore, and P.M. Holligan, 1992: Remote-sensing of oceanic biology in relation to global climate change. *J. Phycol.,* **28,** 579–590.

——, ——, C. Trees, S.B. Hooker, and D. Clark, 1995: The SeaWiFS CZCS-Type pigment algorithm. *NASA Tech. Memo. 104566, Vol. 29,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 34 pp.

——, and S.B. Hooker, 1997: The Atlantic Meridional Transect: Spatially extensive calibration and validation of optical properties and remotely-sensed measurements of ocean color. *Backscatter,* **8,** 8–11.

——, D.G. Cummings, S.W. Gibb, N.W. Rees, R. Woodd-Walker, E.M.S. Woodward, J. Woolfenden, S.B. Hooker, J-F. Berthon, C.D. Dempsey, D.J. Suggett, P. Wood, C. Donlon, N. González-Benítez, I. Huskin, M. Quevedo, R. Barciela-Fernandez, C. de Vargas, and C. McKee, 1998: AMT-5 Cruise Report. *NASA Tech. Memo. 1998–206892, Vol. 2,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 113 pp.

——, N.W. Rees, S. Hooker, P. Holligan, A. Bale, D. Robins, G. Moore, R. Harris, and D. Pilgrim, 2000: The Atlantic Meridional Transect: overview and synthesis of data. *Prog. Oceanogr.,* **45,** 257–312.

Ainsworth, E.J., and F.S. Patt, 2000: "Modifications to the TOMS ozone ancillary data interpolation." In: McClain, C.R., E.J. Ainsworth, R.A. Barnes, R.E. Eplee, Jr., F.S. Patt, W.D. Robinson, M. Wang, and S.W. Bailey, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 1. *NASA Tech. Memo. 2000–206892, Vol. 9,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 69–73.

Ångström, A., 1929: On the atmospheric transmission of sun radiation and on dust in the air. *Geogr. Ann.,* **12,** 130–159.

——, 1961: Techniques of determining the turbidity of the atmosphere. *Tellus,* **13,** 214–223.

Antoine, D., and P. Guevel, 2000: Calibration and validation of satellite ocean color observations: The BOUSSOLE Project. *Proc. Ocean Optics XV,* Monaco, October 16–20, 2000. [Available on CD-ROM: Office of Naval Research, Washington, DC].

Artegiani, A., D. Bregant, E. Paschini, N. Pinardi, F. Raicich, and A. Russo, 1997a: The Adriatic Sea general circulation, Part I: Air–sea interactions and water mass structure. *J. Phys. Oceanogr.,* **27,** 1,492–1,514.

——, ——, ——, ——, ——, and ——, 1997b: The Adriatic Sea general circulation, Part II: Baroclinic circulation structure. *J. Phys. Oceanogr.,* **27,** 1,515–1,532.

ASTM, 1997: "E1256–95, standard test methods for radiation thermometers (single waveband type)." Temperature Measurement, Vol. 14.03, Sect. 14, General Methods and Instrumentation, *Annual Book of ASTM Standards,* American Society of Testing and Materials, Philadelphia, Pennsylvania, 437–443.

Atkins, W.R.G., and H.H. Poole, 1933: The photo-electric measurement of the penetration of light of various wave lengths into the sea and the physiological bearing of results. *Phil. Trans. Roy. Soc. London,* **222,** 129–164.

Austin, R.W., 1974: The remote sensing of spectral radiance from below the ocean surface. In: *Optical Aspects of Oceanography,* N.G. Jerlov and E.S. Nielsen, Eds., Academic Press, London, 317–344.

——, 1980: Gulf of Mexico, ocean color surface truth measurements. *Bound.-Layer Meteorol.,* **18,** 269–285.

——, and G. Halikas, 1976: The index of refraction of seawater. *SIO Ref. 76–1,* Vis. Lab., Scripps Institution of Oceanography, La Jolla, California, 64 pp.

——, and T.J. Petzold, 1981: The determination of the diffuse attenuation coefficient of sea water using the Coastal Zone Color Scanner. In: *Oceanography from Space,* J.F.R. Gower, Ed., Plenum Press, 239–256.

– B –

Bailey, S.W., C.R. McClain, P.J. Werdell, and B.D. Schieber, 2000: "Normalized water-leaving radiance and chlorophyll *a* match-up analyses." In: McClain, C.R., R.A. Barnes, R.E. Eplee, Jr., B.A. Franz, N.C. Hsu, F.S. Patt, C.M. Pietras, W.D. Robinson, B.D. Schieber, G.M. Schmidt, M. Wang, S.W. Bailey, and P.J. Werdell, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 2. *NASA Tech. Memo. 2000–206892, Vol. 10,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 45–52.

Barber, J., S. Malkin, and A. Telfer, 1989: The origin of chlorophyll fluorescence *in vivo* and its quenching of the photosystem II reaction center. *Phil. Trans. R. Soc. Ser. B,* **323,** 227–239.

Barlow, R.G., 1982: Phytoplankton ecology in the southern Benguela current. I. Biochemical composition. *J. Exp. Mar. Biol. Ecol.,* **63,** 209–227.

——, R.F.C. Mantoura, M.A. Gough, and T.W. Fileman, 1993: Pigment signatures of the phytoplankton composition in the northeastern Atlantic during the 1990 spring bloom. *Deep-Sea Res. II,* **40,** 459–477.

——, D.G. Cummings, and S.W. Gibb, 1997: Improved resolution of mono- and divinyl chlorophylls *a* and *b* and zeaxanthin and lutein in phytoplankton extracts using reverse phase C-8 HPLC. *Mar. Ecol. Prog. Ser.,* **161,** 303–307.

——, J. Aiken, H.E. Sessions, S. Lavender, and J. Mantel, 2001: Phytoplankton pigment, absorption and ocean colour characteristics in the southern Benguela ecosystem. *S. Afr. J. Sci.,* **97,** 230–238.

Barnes, R.A., 1994: *SeaWiFS Data: Actual and Simulated.* [World Wide Web page.] From URLs: `http://seawifs.gsfc.nasa.gov/SEAWIFS/IMAGES/spectra1.dat` and `/spectra2.dat` NASA Goddard Space Flight Center, Greenbelt, Maryland.

——, 1996a: "Calculation of an equivalent blackbody temperature for the GSFC sphere." In: Barnes, R.A., E-n. Yeh, and R.E. Eplee, SeaWiFS Calibration Topics, Part 1. *NASA Tech. Memo. 104566, Vol. 39,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 5–17.

——, 1996b: "A comparison of the spectral responses of SeaWiFS and the SeaWiFS Transfer Radiometer." In: Barnes, R.A., E-n. Yeh, and R.E. Eplee, SeaWiFS Calibration Topics, Part 1. *NASA Tech. Memo. 104566, Vol. 39,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 39–48.

——, 1996c: "SeaWiFS center wavelengths." In: Barnes, R.A., E-n. Yeh, and R.E. Eplee, SeaWiFS Calibration Topics, Part 1. *NASA Tech. Memo. 104566, Vol. 39,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 49–53.

——, 1997: "SeaWiFS measurements in orbit: Band-averaged spectral radiance." In: Barnes, R.A., R.E. Eplee, E-n. Yeh, and W.E. Esaias, SeaWiFS Calibration Topics, Part 2. *NASA Tech. Memo. 104566, Vol. 40*, S.B. Hooker and E.R. Firestone Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 48–55.

——, and A.W. Holmes, 1993: Overview of the SeaWiFS ocean sensor. *Proc. SPIE,* **1939,** 224–232.

——, W.L. Barnes, W.E. Esaias, and C.R. McClain, 1994a: Prelaunch Acceptance Report for the SeaWiFS Radiometer. *NASA Tech. Memo. 104566, Vol. 22,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 32 pp.

——, A.W. Holmes, W.L. Barnes, W.E. Esaias, C.R. McClain, and T. Svitek, 1994b: SeaWiFS Prelaunch Radiometric Calibration and Spectral Characterization. *NASA Tech. Memo. 104566, Vol. 23,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 55 pp.

——, ——, and W.E. Esaias, 1995: Stray Light in the SeaWiFS Radiometer. *NASA Tech. Memo. 104566, Vol. 31,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 76 pp.

——, and R.E. Eplee, Jr., 1996: "The SeaWiFS solar diffuser." In: Barnes, R.A., E-n. Yeh, and R.E. Eplee, SeaWiFS Calibration Topics, Part 1. *NASA Tech. Memo. 104566, Vol. 39,* S.B. Hooker and E.R. Firestone Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 54–61.

——, and E-n. Yeh, 1996: "Effects of source spectral shape in SeaWiFS radiance measurements." In: Barnes, R.A., E-n. Yeh, and R.E. Eplee, SeaWiFS Calibration Topics, Part 1. *NASA Tech. Memo. 104566, Vol. 39,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 18–38.

——, and R.E. Eplee, 1997a: "The 1993 SeaWiFS calibration using band-averaged spectral radiances." In: Barnes, R.A., R.E. Eplee, E-n. Yeh, and W.E. Esaias, SeaWiFS Calibration Topics, Part 2. *NASA Tech. Memo. 104566, Vol. 40,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 39–46.

——, and ——, 1997b: "The 1993 SeaWiFS calibration using band-averaged spectral radiances." In: Barnes, R.A., R.E. Eplee, E-n. Yeh, and W.E. Esaias, SeaWiFS Calibration Topics, Part 2. *NASA Tech. Memo. 104566, Vol. 40,* S.B. Hooker and E.R. Firestone Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 39–47.

——, and W.E. Esaias, 1997: "A nominal top-of-the-atmosphere spectrum for SeaWiFS." In: Barnes, R.A., R.E. Eplee, E-n. Yeh, and W.E. Esaias, SeaWiFS Calibration Topics, Part 2. *NASA Tech. Memo. 104566, Vol. 40,* S.B. Hooker and E.R. Firestone Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 3–11.

——, R.E. Eplee, and F.S. Patt, 1998: "SeaWiFS measurements of the moon." In: Sensors, Systems, and Next-Generation Satellites II, *SPIE,* **3498,** 311–324.

——, and C.R. McClain, 1999: "The calibration of SeaWiFS after two years on orbit." In: Sensors, Systems, and Next-Generation Satellites V, *SPIE,* **3870,** 214–227.

——, R.E. Eplee, Jr., F.S. Patt, and C.R. McClain, 1999a: Changes in the radiometric sensitivity of SeaWiFS determined from lunar and solar-based measurements. *Appl. Opt.,* **38,** 4,649–4,664.

——, ——, S.F. Biggar, K.J. Thome, E.F. Zalewski, P.M. Slater, and A.W. Holmes, 1999b: The SeaWiFS Solar Radiation-Based Calibration and the Transfer-to-Orbit Experiment. *NASA Tech. Memo. 1999–206892, Vol. 5,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 28 pp.

——, R.E. Eplee, Jr., G.M. Schmidt, F.S. Patt, and C.R. McClain, 2001: Calibration of SeaWiFS. I. Direct techniques. *Appl. Opt.,* **40,** 6,682–6,700.

Beard, R.M., and M. Plett, 1978: "Dynamic Motion of a Symmetric Dual-Spin Spacecraft." In: Wertz, J.R., *Spacecraft Attitude Determination and Control,* D. Reidel Publishing Company, Dordrecht, Holland, 536–539.

Berger, F., 1958: *Über die ursache des "oberflächeneffekts" bei lichtmessungen unter wasser. Wetter u. Leben,* **10,** 164–170.

——, 1961: *Über den "Taucheffekt" bei der lichtmessung über and unter wasser. Arch. Meteorol. Wien.,* **11,** 224–240.

Berk, A., L.S. Bernstein, and D.C. Robertson, 1989: `MODTRAN`: A moderate resolution model for `LOWTRAN7`. *Tech. Report GL-TR-90-0122,* Geophysical Directorate Phillips Laboratory, Hanscom AFB, Massachusetts, 44 pp.

Berthon, J-F., G. Zibordi, S. Grossi, D. van der Linde, and C. Targa, 1998: The CoASTS time-series of bio-optical measurements in the North Adriatic Sea: An analysis in view to interpretation of satellite color data in coastal waters. *Ocean Optics XIV,* Kailua-Kona, USA, 10–13 November 1998.

——, G. Zibordi, and S.B. Hooker, 2000: Marine optical measurements of a "mucilage" event in the northern Adriatic Sea, *Limnol. Oceanogr.,* **45,** 322–327.

——, ——, D. D'Alimonte, S. Grossi, D. van der Linde, and C. Targa, 2001: Empirical relationships between apparent and inherent optical properties in the northern Adriatic Sea. Proc. Int. Conf. Current Problems in Optics of Natural Waters (ONW'2001), 25–28 September 2001, St. Petersburg, Russia, *Proc. D.S. Rozhdestvensky Opt. Soc.,* 311–317.

——, ——, J.P. Doyle, S. Grossi, D. van der Linde, and C. Targa, 2002: Coastal Atmosphere and Sea Time Series (CoASTS), Part 2: Data Analysis. *NASA Tech. Memo. 2002–206892, Vol. 20,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 25 pp.

Bidigare, R.R., 1991: "Analysis of algal chlorophylls and carotenoids." In: Marine Particles: Analysis and Characterization. *Geophysical Monograph 63,* D.C. Hurd and D.W. Spencer, Eds., American Geophysical Union, Washington, DC, 119–123.

Biggar, S.F., 2001: A method for correcting the irradiance of standards of spectral irradiance (lamps) operated at nonstandard distances. *Opt. Photonics News,* (withdrawn).

——, D.I. Gelman, and P.N. Slater, 1990: Improved evaluation of optical depth components from Langley plot data. *Remote Sens. Environ.,* **32,** 91–101.

——, K.J. Thome, P.N. Slater, A.W. Holmes, and R.A. Barnes, 1993: Preflight solar radiation-based calibration of SeaWiFS. *SPIE,* **1939,** 233–242.

——, P.N. Slater, K.J. Thome, A.W. Holmes, and R.A. Barnes, 1994: "Preflight solar-based calibration of SeaWiFS." In: McClain, C.R., R.S. Fraser, J.T. McLean, M. Darzi, J.K. Firestone, F.S. Patt, B.D. Schieber, R.H. Woodward, E-n. Yeh, S. Mattoo, S.F. Biggar, P.N. Slater, K.J. Thome, A.W. Holmes, R.A. Barnes, and K.J. Voss, Case Studies for SeaWiFS Calibration and Validation, Part 2. *NASA Tech. Memo. 104566, Vol. 19,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 25–32.

——, K.J. Thome, P.N. Slater, A.W. Holmes, and R.A. Barnes, 1995: "Second SeaWiFS preflight solar radiation-based calibration experiment." In: Mueller, J.L., R.S. Fraser, S.F. Biggar, K.J. Thome, P.N. Slater, A.W. Holmes, R.A. Barnes, C.T. Weir, D.A. Siegel, D.W. Menzies, A.F. Michaels, and G. Podesta, Case Studies for SeaWiFS Calibration and Validation, Part 3. *NASA Tech. Memo. 104566, Vol. 27,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 20–24.

Bjornland, T., and S. Liaaen-Jensen, 1989: Distribution patterns of carotenoids in relation to chromophyte phylogeny and systematics. In: *The Chromophyte Algae: Problems and Perspectives.* J.C. Green, B.S.C. Leadbeater, and W.L. Diver, Eds., Clarendon Press, Oxford, 37–61.

Bonzagni, M., U. Amato, R. Rizzi, and R. Guzzi, 1989: Evaluation of the shadowband effect on a 2π spectroradiometer. *Appl. Opt.,* **28,** 2,199–2,201.

Brewer, P.G., and J.P. Riley, 1965: The automatic determination of nitrate in sea water. *Deep-Sea Res.,* **12,** 765–772.

Bricaud, A., A. Morel, and L. Prieur, 1981: Absorption by dissolved organic matter of the sea (yellow substance) in the UV and visible domains. *Limnol. Oceanogr.,* **26,** 43–53.

——, A.L. Bedhomme, and A. Morel, 1988: Optical properties of diverse phytoplanktonic species: Experimental results and theoretical interpretation. *J. Plankton Res.,* **10,** 851–873.

——, and D. Stramski, 1990: Spectral absorption coefficients of living phytoplankton and nonalgal biogenous matter: A comparison between the Peru upwelling area and Sargasso Sea. *Limnol. Oceanogr.,* **35,** 562–582.

——, M. Babin, A. Morel, and H. Claustre, 1995: Variability in the chlorophyll-specific absorption coefficients of natural phytoplankton: Analysis and parameterization. *J. Geophys. Res.,* **100,** 13,321–13,332.

——, A. Morel, M. Babin, K. Allali, and H. Claustre, 1998: Variations of light absorption by suspended particles with chlorophyll *a* concentration in oceanic (Case-1) waters: Analysis and implications for bio-optical models. *J. Geophys. Res.,* **103,** 31,033–31,044.

Briegleb, B.P., and V. Ramanathan, 1982: Spectral and diurnal variations in clear sky planetary albedo. *J. Climate Appl. Meteor.,* **21,** 1,168–1,171.

Brown, C.W., 1995: "Classification of coccolithophore blooms in ocean color imagery." In: McClain, C.R., W.E. Esaias, M. Darzi, F.S. Patt, R.H. Evans, J.W. Brown, K.R. Arrigo, C.W. Brown, R.A. Barnes, and L. Kumar, Case Studies for SeaWiFS Calibration and Validation, Part 4. *NASA Tech. Memo. 104566, Vol. 28,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 13–19.

——, and J.A. Yoder, 1994: Coccolithophorid blooms in the global ocean. *J. Geophys. Res.,* **99,** 7,467–7,482.

Brown, J.W., and S.B. Hooker, 1985: FIXSRC: A FORTRAN preprocessor. *Comp. Phys. Comm.,* **38,** 435–440.

Brown, P.C., S.J. Painting, and K.L. Cochrane, 1991: Estimates of phytoplankton and bacterial biomass and production in the northern and southern Benguela ecosystems. *S. Afr. J. Sci.,* **11,** 537–564.

Bruegge, C.J., V.G. Duval, N.L. Chrien, and D.J. Diner, 1993: Calibration plans for the multi-angle, imaging spectroradiometer (MISR). *Metrologia,* **30,** 231–221.

Buiteveld, H., J.H.H. Hakvoort, and M. Donze, 1994: The optical properties of pure water. *Ocean Optics XIII,* J.S. Jaffe, Ed., Proc. SPIE, **2258,** 174–183.

Bukata, R.P., J.H. Jerome, and J.E. Bruton, 1988: Particulate concentrations in Lake St. Clair as recorded by a shipborne multispectral optical monitoring system. *Remote Sens. Environ.,* **25,** 201–229.

——, ——, K.Y. Kondrattyev, and D.V. Pozdnyakov, 1995: *Optical Properties and Remote Sensing of Inland and Coastal Waters.* CRC Press, Boca Raton, Florida, 362 pp.

Bustillos-Guzmán, J., H. Claustre, and J.C. Marty, 1995: Specific phytoplankton signatures and their relationship to hydrographic conditions in the coastal northwestern Mediterranean Sea. *Mar. Ecol. Prog. Ser.,* **124,** 247–258.

Butler, J.J., and B.C. Johnson, 1996: EOS radiometric measurement comparisons at Hughes Santa Barbara Remote Sensing and NASA's Jet Propulsion Laboratory. *The Earth Observer,* **8**(5), 17–19.

– C –

Carder, K.L., and R.G. Steward, 1985: A remote sensing reflectance model of a red tide dinoflagellate off West Florida. *Limnol. Oceanogr.,* **30,** 286–298.

——, S.K. Hawes, K.A. Baker, R.C. Smith, R.G. Steward, and B.G. Mitchell, 1991: Reflectance model for quantifying chlorophyll *a* in the presence of productivity degradation products. *J. Geophys. Res.,* **96,** 20,599–20,611.

——, F.R. Chen, Z.P. Lee, and S.K. Hawes, 1999: Semi-analytic Moderate-Resolution Imaging Spectrometer algorithms for chlorophyll *a* and absorption with bio-optical domains based on nitrate-depletion temperatures. *J. Geophys. Res.,* **104,** 5,403–5,421.

Charlson, R.J., J.E. Lovelock, M.O. Andreae, and S.G. Warren, 1987: Oceanic phytoplankton, atmospheric sulphur, cloud albedo, and climate. *Nature,* **326,** 655–661.

——, S.E. Schwartz, J.M. Hales, R.D. Cess, J.A. Coakley, J.E. Hansen, and D.J. Hofmann, 1992: Climate forcing by anthropogenic aerosols. *Science,* **255,** 423–430.

Chen, L.C., and G.M. Lerner, 1978: "Sun sensor models." In: Wertz, J.R., *Spacecraft Attitude Determination and Control,* D. Reidel Publishing Company, Dordrecht, Holland, 224–227.

Chisholm, S.W., R.J. Olson, E.R. Zettler, R. Goericke, J.B. Waterbury, and N.A. Welschmeyer, 1988: A novel free-living prochlorophyte abundant in the oceanic euphotic zone. *Nature,* **334,** 340–343.

Chobotov, V.A., 1991: *Spacecraft Attitude Dynamics and Control,* Krieger Publishing Co., Malabar, Florida, 33–40.

Clark, D., H.R. Gordon, K.J. Voss, Y. Ge, W. Broenkow, and C. Trees, 1997: Validation of atmospheric correction over the oceans. *J. Geophys. Res.,* **102,** 17,209-17,217.

——, M.E. Feinholz, M.A. Yarbrough, B.C. Johnson, S.W. Brown, Y.S. Kim, and R.A. Barnes, 2001: "Overview of the radiometric calibration of MOBY." In: Earth Observing Systems VI, *SPIE,* **4483,** 64–76.

Claustre, H., 1994: Phytoplankton pigment signatures of the trophic status in various oceanic regimes. *Limnol. Oceanogr.,* **39,** 1,207–1,211.

——, P. Kerhervé, J-C. Marty, L. Prieur, and J.H. Hecq, 1994: Phytoplankton distribution associated with a geostrophic front: ecological and biogeochemical implications. *J. Mar. Res.,* **52,** 711–742.

——, A. Morel, S.B. Hooker, M. Babin, D. Antoine, K. Oubelkheir, A. Bricaud, K. Leblanc, B. Quéguiner, and S. Maritorena, 2002: Is desert dust making oligotrophic waters greener? *Geophys. Rev. Lett.,* **29,** 107-1–107-4.

——, S.B. Hooker, L. Van Heukelem, J-F. Berthon, R. Barlow, J. Ras, H. Sessions, C. Targa, C.S. Thomas, D. van der Linde, and J-C. Marty, 2004: An intercomparison of HPLC phytoplankton methods using *in situ* samples: Application to remote sensing and database activities. *Mar. Chem.,* **85,** 41–61.

Cox, C., and W. Munk, 1954: Measurements of the roughness of the sea surface from photographs of the sun's glitter. *J. Opt. Soc. Am.,* **44,** 838–850.

Curcio, J.A., and C.C. Petty, 1951: The near infrared absorption spectrum of liquid water. *J. Opt. Soc. Amer.,* **41,** 302–305.

– D –

D'Alimonte, D., G. Zibordi, and J-F. Berthon, 2001: "The JRC data processing system." In: Hooker, S.B., G. Zibordi J-F. Berthon, D. D'Alimonte, S. Maritorena, S. McLean, and J. Sildam, Results of the Second SeaWiFS Data Analysis Round Robin, March 2000 (DARR-00). *NASA Tech. Memo. 2001–206892, Vol. 15,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 71 pp.

——, and G. Zibordi, 2002: "Computing the immersion factor." In: Zibordi, G., D. D'Alimonte, D. van der Linde, J-F. Berthon, S.B. Hooker, J.L. Mueller, G. Lazin, and S. McLean, The Eighth SeaWiFS Intercalibration Round-Robin Experiment (SIRREX-8), September–December 2001. *NASA Tech. Memo. 2002–206892, Vol. 20,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 21–24.

Darzi, M., 1998: SeaWiFS Algorithm Flow Chart. *NASA Contractor Report 1998–206848,* NASA Goddard Space Flight Center, Greenbelt, Maryland, 36 pp.

——, F.S. Patt, and L. Kumar, 1995: "Algorithm for the application of the sensor calibration for SeaWiFS level-2 processing." In: McClain, C.R., K. Arrigo, W.E. Esaias, M. Darzi, F.S. Patt, R.H. Evans, J.W. Brown, C.W. Brown, R.A. Barnes, and L. Kumar, SeaWiFS Algorithms, Part 1. *NASA Tech. Memo. 104566, Vol. 28,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 26–32.

Dave, J.V., 1972: Development of programs for computing characteristics of ultraviolet radiation, *Tech. Rept.,* Vector Case, IBM Corp., Fed. Syst. Div., Gaithersburg, Maryland, 337 pp.

Davies, B.H., 1976: Carotenoids. In: *Chemistry and Biochemistry of Plant Pigments, Volume 2, 2*nd *Edition.* T.W. Goodwin, Ed., Academic Press, London, 38–165.

Dedieu, G., P-Y. Deschamps, and Y.H. Kerr, 1987: Satellite estimation of solar irradiance at the surface of the earth and of surface albedo using a physical model applied to Meteosat data. *J. Climate Appl. Meteor.,* **26,** 79–87.

De Santis, L.V., C. Tomasi, and V. Vital, 1994: Characterization of Ångström's turbidity parameters in the Po Valley area for summer conditions of the atmosphere. *Il Nuovo Cimento,* **17C,** 407–430.

Deschamps, P.Y., M. Herman, and D. Tanré, 1983: Modeling of the atmospheric effects and its application to the remote sensing of ocean color. *Appl. Opt.,* **22,** 3,751–3,758.

DeWitt, D.P., and J.C. Richmond, 1988: "Thermal radiative properties of materials." In: *Theory and Practice of Radiation Thermometry,* D.P. DeWitt and G.D. Nutter, Eds., John Wiley and Sons, Inc., New York, 91–187.

Diehl, H.P., and H. Haardt, 1980: Measurement of the spectral attenuation to support biological research in a "plankton tube" experiment. *Oceanol. Acta,* **3,** 89–96.

Ding, K., and H.R. Gordon, 1994: Atmospheric correction of ocean-color sensors: effects of the Earth's curvature., *Appl. Opt.,* **33,** 7,096–7,106.

Doyle, J.P., and G. Zibordi, 1998: Correction of oceanographic tower-shading effects on in-water optical measurements. *Proc. Ocean Optics XIV,* [Available on CD-ROM], Office of Naval Research, Washington, DC.

——, and ——, 2002a: Monte Carlo modeling of optical transmission within 3-D shadowed field: Application to large deployment structures, **41,** 4,283–4,306.

Doyle, J.P., and G. Zibordi, 2002b: Optical propagation within a 3-Dshadowed atmosphere–ocean field: Application to large deployment structures. *Appl. Opt.,* **42,** 4,283–4,306.

Draper, N.R., and H. Smith, 1981: *Applied Regression Analysis.* Wiley, New York, 709 pp.

Duncombe Rae, C.M., 1991: Agulhas retroflection rings in the South Atlantic: an overview. *S. Afr. J. Sci.,* **11,** 327–344.

– E –

Early, E.A., and B.C. Johnson, 1997: "Calibration and characterization of the GSFC sphere." In: Yeh, E-n., R.A. Barnes, M. Darzi, L. Kumar, E.A. Early, B.C. Johnson, and J.L. Mueller, Case Studies for SeaWiFS Calibration and Validation, Part 4. *NASA Tech. Memo. 104566, Vol. 41,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 3–17.

——, E.A. Thompson, and P. Disterhoft, 1998a: A field calibration unit for ultraviolet spectroradiometers. *Appl. Opt.,* **37,** 6,664–6,670.

——, A. Thompson, B.C. Johnson, J. DeLuisi, P. Disterhoft, D. Wardle, E. Wu, W. Mou, J. Ehramjian, J. Tusson, T. Mestechkina, M. Beaubian, J. Gibson, and D. Hayes, 1998b: The 1996 North American interagency intercomparison of ultraviolet monitoring spectroradiometers. *J. Res. NIST,* **103,** 449–482.

——, ——, ——, ——, ——, ——, ——, ——, Y. Sun, T. Lucas, T. Mestechkina, L. Harrison, J. Berndt, and D. Hayes, 1998c: The 1995 North American interagency intercomparison of ultraviolet monitoring spectroradiometers. *J. Res. NIST,* **103,** 15–62.

——, P.Y. Barnes, B.C. Johnson, J.J. Butler, C.J. Bruegge, S.F. Biggar, P.R. Spyak, and M.M. Pavlov, 2000: Bidirectional reflectance round-robin in support of the Earth Observing System Program. *J. Atmos. Ocean. Technol.,* **17,** 1,077–1,091.

Emery, W.J., and J.S. Dewar, 1982: Mean temperature and salinity-depth and temperature-depth curves for the North Atlantic and the North Pacific. *Prog. Oceanogr.,* **11,** 219–305.

Eplee, R.E., Jr., and R.A. Barnes, 1997: "The SeaWiFS temperature calibration." In: Barnes, R.A., R.E. Eplee, E-n. Yeh, and W.E. Esaias, SeaWiFS Calibration Topics, Part 2. *NASA Tech. Memo. 104566, Vol. 40,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 56–62.

——, and ——, 2000: "Lunar data analysis for SeaWiFS calibration." In: McClain, C.R., E.J. Ainsworth, R.A. Barnes, R.E. Eplee, Jr., F.S. Patt, W.D. Robinson, M. Wang, and S.W. Bailey, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 1. *NASA Tech. Memo. 2000–206892, Vol. 9,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 17–27.

——, and C.R. McClain, 2000a: "MOBY data analysis for vicarious calibration of SeaWiFS bands 1–6." In: McClain, C.R., E.J. Ainsworth, R.A. Barnes, R.E. Eplee, Jr., F.S. Patt, W.D. Robinson, M. Wang, and S.W. Bailey, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 1. *NASA Tech. Memo. 2000–206892, Vol. 9,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 43–50.

——, and ——, 2000b: "SeaWiFS global clear-water analysis." In: McClain, C.R., R.A. Barnes, R.E. Eplee, Jr., B.A. Franz, N.C. Hsu, F.S. Patt, C.M. Pietras, W.D. Robinson, B.D. Schieber, G.M. Schmidt, M. Wang, S.W. Bailey, and P.J. Werdell, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 2. *NASA Tech. Memo. 2000–206892, Vol. 10,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 29–33.

——, and F.S. Patt, 2000: "Cloud-top radiance analysis for SeaWiFS bilinear gain knee calibration." In: McClain, C.R., E.J. Ainsworth, R.A. Barnes, R.E. Eplee, Jr., F.S. Patt, W.D. Robinson, M. Wang, and S.W. Bailey, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 1. *NASA Tech. Memo. 2000–206892, Vol. 9,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 13–16.

——, R.A. Barnes, and F.S. Patt, 2000: "Solar data analysis for SeaWiFS calibration." In: McClain, C.R., E.J. Ainsworth, R.A. Barnes, R.E. Eplee, Jr., F.S. Patt, W.D. Robinson, M. Wang, and S.W. Bailey, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 1. *NASA Tech. Memo. 2000–206892, Vol. 9,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 28–37.

——, W.D. Robinson, S.W. Bailey, D.K. Clark, P.J. Werdell, M. Wang, R.A. Barnes, and C.R. McClain, 2001: Calibration of SeaWiFS. II. Vicarious techniques. *Appl. Opt.,* **40,** 6,701–6,718.

Eppeldauer, G., 1991: Temperature monitored/controlled silicon photodiodes for standardization. *SPIE,* **1479,** 71–77.

——, and J.E. Hardis, 1991: Fourteen decade photocurrent measurements with large area silicon photodiodes at room temperature. *Appl. Opt.,* **30,** 3,091–3,099.

Evans, R.H., and H.R. Gordon, 1994: Coastal zone color scanner "system calibration": A retrospective examination. *J. Geophys. Res.,* **99,** 7,293–7,307.

– F –

Falkowski, P.G., and D.A. Kiefer, 1985: Chlorophyll-a fluorescence in phytoplankton: Relationships to photosynthesis and biomass. *J. Plankton. Res.,* **7,** 715–731.

Fallon, L., 1978: "Recursive least-squares estimators and Kalman filters." In: Wertz, J.R., *Spacecraft Attitude Determination and Control,* D. Reidel Publishing Company, Dordrecht, Holland, 459–469.

——, and P.V. Rigterink, 1978: "Introduction to estimation theory." In: Wertz, J.R., *Spacecraft Attitude Determination and Control,* D. Reidel Publishing Company, Dordrecht, Holland, 447–451.

Fargion, G.S., and J.L. Mueller, 2000: Ocean Optics Protocols for Satellite Ocean Color Sensor Validation, Revision 2, *NASA Tech. Memo. 2000-209966,* NASA Goddard Space Flight Center, Greenbelt, Maryland, 184 pp.

——, and C.R. McClain, 2001: SIMBIOS Project 2000 Annual Report, *NASA Tech. Memo. 2001–209976* NASA Goddard Space Flight Center, Greenbelt, Maryland, 164 pp.

Ferrari, G.M., M.D. Dowell, S. Grossi, and C. Targa, 1996: Relationship between the optical properties of chromophoric dissolved organic matter and total concentration of dissolved organic carbon in the southern Baltic Sea region. *Mar. Chem.,* **55,** 299–316.

——, and ——, 1999: A method for removal of light-absorption by phytoplankton pigments using chemical oxidation, *J. Phycol.,* **35,** 1,090–1,098.

Firestone, E.R., and S.B. Hooker, 1998: SeaWiFS Prelaunch Technical Report Series Final Cumulative Index. *NASA Tech. Memo. 1998–104566, Vol. 43,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 4–8.

Firestone, J.K., R.H. Woodward, and C.R. McClain, 1994: "An evaluation of surface wind products for use in SeaWiFS." In: McClain, C.R., R.S. Fraser, J.T. McLean, M. Darzi, J.K. Firestone, F.S. Patt, B.D. Schieber, R.H. Woodward, E-n. Yeh, S. Mattoo, S.F. Biggar, P.N. Slater, K.J. Thome, A.W. Holmes, R.A. Barnes, and K.J. Voss, Case Studies for SeaWiFS Calibration and Validation, Part 2. *NASA Tech. Memo. 104566, Vol. 19,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 50–64.

Flittner, D.E., and P.N. Slater, 1991: Stability of narrow-band filter radiometers in the solar-reflected range. *Photogramm. Eng. Remote Sens.,* **57,** 165–171.

Fougnie, B., R. Frouin, P. Lecompte, P-Y. Deschamps, 1999a: Reduction of skylight reflection effects in the above-water measurements of diffuse marine reflectance. *Appl. Opt.,* **38,** 3,844–3,856.

——, P-Y. Deschamps, R. Frouin, 1999b: Vicarious calibration of the POLDER ocean color spectral bands using *in situ* measurements. *IEEE Trans. Geosci. Remote Sens.,* **37,** 1,567–1,574.

Fowler, J.B., 1977: The electronic aspects of the NBS detector response and intercomparison package and laser stabilization facility. *Electro-Optics/Laser 77 Conference and Exposition,* Industrial and Scientific Conference Management, Chicago, Illinois, 689–695.

Fraser, R.S., S. Mattoo, E-n. Yeh, and C.R. McClain, 1997: Algorithm for atmospheric and glint corrections of satellite measurements of ocean pigment. *J. Geophys. Res.,* **102,** 17,107–17,118.

Fröhlich, C., and G.E. Shaw, 1980: New determination of Rayleigh scattering in the terrestrial atmosphere. *Appl. Opt.,* **19,** 1,773–1,775.

Frouin, R., D.W. Lingner, K. Baker, C. Gautier, and R. Smith, 1989: A simple analytical formula to compute clear sky total and photosynthetically available solar irradiance at the ocean surface. *J. Geophys. Res.,* **94,** 9,731–9,742.

——, and B. Chertock, 1992: A technique for global monitoring of net solar irradiance at the ocean surface. Part I: Model. *J. Appl. Meteor.,* **31,** 1,056–1,066.

——, M. Schwindling, and P.Y. Deschamps, 1996: Spectral reflectance of sea foam in the visible and near infrared: *In situ* measurements and remote sensing implications. *J. Geophys. Res.,* **101,** 14,361–14,371.

Fu, G., K.S. Baith, and C.R. McClain, 1998: SeaDAS: The SeaWiFS Data Analysis System. *Proc. 4th Pacific Ocean Remote Sensing Conf.,* Qingdao, China, 28–31 July 1998, 73–79.

Fukushima, H., M. Schmidt, B.J. Sohn, M. Toratani, and I. Uno, 1999: Detection of dust loaded airmass in SeaWiFS Imagery: an empirical dust index in comparison with model-predicted dust distribution over the Pacific in April 1998, *Proc. Int. Symp. Remote Sens. '99,* Korean Society of Remote Sensing, ISSN 1226-9743, 89–94.

Furnas, M.J., 1990: *In situ* growth rates of marine phytoplankton: approaches to measurement, community and species growth rates. *J. Plank. Res.,* **12,** 1,117–1,151.

– G –

Garside, C., 1982: Chemiluminescent technique for the determination of nanomolar concentrations of nitrate and nitrite in seawater. *Mar. Chem.,* **11,** 159–167.

Garver, S.A., and D.A. Siegel, 1997: Inherent optical property inversion of ocean color spectra and its biogeochemical interpretation. 1. Time series from the Sargasso Sea. *J. Geophys. Res.,* **102,** 18,607–18,625.

Garzoli, S.L., P.L. Richardson, C.M. Duncombe Rae, D.M. Fratantoni, G.J. Goni, and A.J. Roubicek, 1999: Three Agulhas rings observed during the Benguela Current Experiment. *J. Geophys. Res.,* **104,** 20,971–20,985.

Gentile, T.R., and J.M. Houston, J.E. Hardis, C.L. Cromer, and A.C. Parr, 1996: National Institute of Standards and Technology High-accuracy Cryogenic Radiometer. *Appl. Opt.,* **35,** 1,056–1,068.

Gibb, S.W., J.W. Wood, and R.F.C. Mantoura, 1995: Automation of flow injection gas diffusion-ion chromatography for the nanomolar determination of methylamines and ammonia in seawater and atmospheric samples. *J. Autom. Chem.,* **17,** 205–212.

——, R.F.C. Mantoura, P.S. Liss, and R.G. Barlow, 1998: Distribution and biogeochemistry of methylamines and ammonia in the Arabian Sea. *Deep-Sea Res.,* **46,** 593–615.

Gilmartin, M., and N. Revelante, 1980: Nutrient input and the summer nanoplankton bloom in the northern Adriatic Sea. *Mar. Ecol.,* **1,** 169–180.

——, D. Degobbis, N. Relevante, and N. Smodlaka, 1990: The mechanism controlling plant nutrient concentrations in the Northern Adriatic Sea. *Int. Revue Ges. Hydrobiol.,* **75,** 425–445.

Gordon, H.R., 1981: A preliminary assessment of the Nimbus-7 CZCS atmospheric correction algorithm in a horizontally inhomogeneous atmosphere. In: *Oceanography from Space,* J.F.R. Gower, Ed., Plenum Press, 257–266.

——, 1985: Ship perturbation of irradiance measurements at sea. 1: Monte Carlo simulations. *Appl. Opt.,* **24,** 4,172–4,182.

——, 1995: Remote sensing of ocean color: A methodology for dealing with broad spectral bands and significant out-of-band response. *Appl. Opt.,* **34,** 8,363–8,374.

——, 1998: In-orbit calibration strategy for ocean color sensors. *Remote Sens. Environ.,* **63,** 265–278.

——, and W.R. McCluney, 1975: Estimation of the depth of sunlight penetration in the sea for remote sensing. *Appl. Opt.,* **14,** 413–416.

——, and D.K. Clark, 1981: Clear water radiances for atmospheric correction of coastal zone color scanner imagery. *Appl. Opt.,* **20,** 4,175–4,180.

——, ——, J.W. Brown, O.B. Brown, R.H. Evans, and W.W. Broenkow, 1983: Phytoplankton pigment concentrations in the Middle Atlantic bight: comparison between ship determinations and Coastal Zone Color Scanner estimates. *Appl. Opt.,* **22,** 20–26.

——, J.W. Brown, and R.H. Evans, 1988a: Exact Rayleigh scattering calculations for use with the Nimbus-7 Coastal Zone Color Scanner. *Appl. Opt.,* **27,** 862–871.

——, O.B. Brown, R.H. Evans, J.W. Brown, R.C. Smith, K.S. Baker, and D.K. Clark, 1988b: A semianalytic radiance model of ocean color, *J. Geophys. Res.,* **93,** 10,909–10,924.

——, and K. Ding, 1992: Self shading of in-water optical instruments. *Limnol. Oceanogr.,* **37,** 491–500.

——, and M. Wang, 1992: Surface roughness considerations for atmospheric correction of ocean color sensors. 1: Rayleigh scattering component. *Appl. Opt.,* **31,** 4,247–4,260.

——, and ——, 1994a: Retrieval of water-leaving radiance and aerosol optical thickness over the oceans with SeaWiFS: a preliminary algorithm. *Appl. Opt.,* **33,** 443–452.

——, and ——, 1994b: Influence of oceanic whitecaps on atmospheric correction of ocean color sensors. *Appl. Opt.,* **33,** 7,354–7,763.

Gould, R.W., and R.A. Arnone, 1994: Extending Coastal Zone Color Scanner estimates of the diffuse attenuation coefficient into case II waters. *SPIE, Ocean Optics XII,* **2258,** 342–356.

——, ——, and M. Sydor, 1998: Testing a new remote sensing reflectance algorithm to estimate absorption and scattering in Case-2 Waters. [Available on CD-ROM], *SPIE Ocean Optics XII,* Hawaii.

——, ——, and P.M. Martinolich, 1999: Spectral dependence of the scattering coefficient in Case-1 and Case-2 waters. *Appl. Opt.,* **38,** 2,377–2,383.

Graeme, J.G., 1995: *Photodiode Amplifiers: Operational Amplifier Solutions,* McGraw-Hill, New York, 252 pp.

Grasshoff, K., 1976: *Methods of Seawater Analysis.* Verlag Chemie, Weilheim, Germany, 317 pp.

——, M. Ehrhardt, and K. Kremling, 1983: *Methods of Seawater Analysis.* Second edition. Verlag Chemie, Weinheim, 419 pp.

Green, S.A., and N. Blough, 1994: Optical absorption and fluorescence properties of chromophoric dissolved organic matter in natural waters. *Limnol. Oceanogr.,* **39,** 1,903–1,916.

Gregg, W.W., F.S. Patt, and R.H. Woodward, 1993: The Simulated SeaWiFS Data Set, Version 1. *NASA Tech. Memo. 104566, Vol. 9,* S.B. Hooker, E.R. Firestone, and A.W. Indest, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 17 pp.

——, ——, A.L. Mezaache, J.D. Chen, J.A. Whiting, 1994: The Simulated SeaWiFS Data Set, Version 2. *NASA Tech. Memo. 104566, Vol. 15,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 42 pp., plus color plates.

——, and R.H. Woodward, 1998: Improvements in high frequency ocean color observations: Combining data from SeaWiFS and MODIS, *IEEE Trans. Geosci. Remote Sens.,* **36,** 1,350–1,353.

Greenberg, A.E., L.S. Clesceri, and A.D. Eaton (Eds.), 1992: *Standard Methods for the Examination of Water and Wastewater, 18th Edition.* American Public Health Association, Washington, DC, 10–19.

Guzzi, R., G. Maracci, R. Rizzi, and R. Siccardi, 1985: Spectroradiometer for ground-based atmospheric measurements related to remote sensing in the visible from a satellite. *Appl. Opt.,* **24,** 2,859–2,864.

– H –

Hale, G.M., and M.R. Query, 1973: Optical constants of water in the 200-nm to 200 μm wavelength region. *Appl. Opt.,* **12,** 555–563.

Hansen, J.E., and L.D. Travis, 1974: Light scattering in planetary atmospheres. *Space Sci. Rev.,* **16,** 527–610.

Hapke, B., 1986: Bidirectional reflectance spectroscopy. 4. Extinction and the opposition effect. *Icarus,* **67,** 246–280.

Harrison, L., J. Michalsky, and J. Berndt, 1994: Automatic multifilter rotating shadow-band radiometer: An instrument for optical depth and radiation measurements. *Appl. Opt.,* **33,** 5,118–5,125.

Hashmall, J.A., and J. Sedlak, 1997: The use of magnetometers for accurate attitude determination. *12th International Symp. Space Flight Dynamics,* Darmstadt, Germany, 179–184.

Headrick, D., 1978: "Momentum Bias Control Systems." In: Wertz, J.R., *Spacecraft Attitude Determination and Control,* D. Reidel Publishing Company, Dordrecht, Holland, 601–603.

Heath, D.F., Z. Wei, W.K. Fowler, and V.W. Nelson, 1993: Comparison of spectral radiance calibrations of SBUV-2 satellite ozone monitoring instruments using integrating sphere and flat-plate diffuser techniques. *Metrologia,* **30,** 259–264.

Helfenstein, P., and J. Veverka, 1987: Photometric properties of lunar terrains derived from Hapke's equation. *Icarus,* **72,** 342–357.

Herman, J.R., P.K. Bhartia, O. Torres, N.C. Hsu, C.J. Seftor, and E. Celarier, 1997: Global distribution of UV-absorbing aerosols from Nimbus-7/TOMS data, *J. Geophys. Res.,* **102,** 16,911–16,922.

Hobbie, J.E., R.J. Daley, and S. Jasper, 1977: Use of Nucleopore filters for counting bacteria by fluorescence microscopy. *Appl. Environ. Microbio.,* **33,** 1,225–1,228.

HOBI Labs, 2002: *HydroSCAT-6 Spectral Backscattering Sensor, Users Manual.* Hydro-Optics, Biology and Instrumentation Laboratories, Inc., Moss Landing, California, 63 pp.

Holben, B.N., T.F. Eck, I. Slutsker, D. Tanré, J.P. Buis, A. Setzer, E. Vermote, J.A. Reagan, Y.I. Kaufman, T. Nakajima, F. Lavenu, I. Jankowiak, and A. Smirnov, 1998: AERONET—A federated instrument network and data archive for aerosol characterization. *Remote Sens. Environ.,* **66,** 1–16.

Holm-Hansen, O., C.J. Lorenzen, R.W. Holmes, and J.D.H. Strickland, 1965: Fluorometric determination of chlorophyll. *J. du Cons. Int'l. pour l'Explor. de la Mer,* **30,** 3–15.

Hooker, S.B., and J.W. Brown, 1985: CENTER: A software package for center estimation. *Comp. Phys. Comm.,* **38,** 421–433.

——, W.E. Esaias, G.C. Feldman, W.W. Gregg, and C.R. McClain, 1992: An Overview of SeaWiFS and Ocean Color. *NASA Tech. Memo. 104566, Vol. 1,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 24 pp., plus color plates.

——, and ——, 1993: An overview of the SeaWiFS project. *Eos, Trans., Amer. Geophys. Union,* **74,** 241–246.

——, C.R. McClain, and A. Holmes, 1993a: Ocean color imaging: CZCS to SeaWiFS. *Marine Tech. Soc. J.,* **27,** 3–15.

——, W.E. Esaias, and L.A. Rexrode, 1993b: Proceedings of the First SeaWiFS Science Team Meeting. *NASA Tech. Memo. 104566, Vol. 8,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 61 pp.

——, ——, J.K. Firestone, T.L. Westphal, E. Yeh, and Y. Ge, 1994a: The SeaWiFS Bio-Optical Archive and Storage System (SeaBASS), Part 1. *NASA Tech. Memo. 104566, Vol. 20,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 40 pp.

——, T.L. Westphal, Y. Ge, 1994b: "The SIRREX database." In: Hooker, S.B., C.R. McClain, J.K. Firestone, T.L. Westphal, E. Yeh, and Y. Ge, The SeaWiFS Bio-Optical Archive and Storage System (SeaBASS), Part 1. *NASA Tech. Memo. 104566, Vol. 20,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 23–30.

——, C.R. McClain, J.K. Firestone, T.L. Westphal, E-n. Yeh, and Y. Ge, 1994c: The SeaWiFS Bio-Optical Archive and Storage System (SeaBASS), Part 1. *NASA Tech. Memo. 104566, Vol. 20,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 40 pp.

——, and J. Aiken, 1998: Calibration evaluation and radiometric testing of field radiometers with the SeaWiFS Quality Monitor (SQM). *J. Atmos. Ocean. Technol.,* **15,** 995–1,007.

——, G. Zibordi, G. Lazin, and S. McLean, 1999: The SeaBOARR-98 Field Campaign. *NASA Tech. Memo. 1999–206892, Vol. 3,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 40 pp.

——, and G. Lazin, 2000: The SeaBOARR-99 Field Campaign. *NASA Tech. Memo. 2000–206892, Vol. 8,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, 46 pp.

——, and S. Maritorena, 2000: An evaluation of oceanographic radiometers and deployment methodologies. *J. Atmos. Ocean. Technol.,* **17,** 811–830.

——, and C.R. McClain, 2000: The calibration and validation of SeaWiFS data. *Prog. Oceanogr.,* **45,** 427–465.

——, G. Zibordi, J-F. Berthon, S.W. Bailey, and C.M. Pietras, 2000a: The SeaWiFS Photometer Revision for Incident Surface Measurement (SeaPRISM) Field Commissioning. *NASA Tech. Memo. 2000–206892, Vol. 13,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 24 pp.

——, H. Claustre, J. Ras, L. Van Heukelem, J-F. Berthon, C. Targa, D. van der Linde, R. Barlow, and H. Sessions, 2000b: The First SeaWiFS HPLC Analysis Round-Robin Experiment (SeaHARRE-1). *NASA Tech. Memo. 2000–206892, Vol. 14,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 42 pp.

——, G. Zibordi, J-F. Berthon, D. D'Alimonte, S. Maritorena, S. McLean, and J. Sildam, 2001: Results of the Second SeaWiFS Data Analysis Round Robin, March 2000 (DARR-00). *NASA Tech. Memo. 2001–206892, Vol. 15,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 71 pp.

——, S. McLean, J. Sherman, M. Small, G. Lazin, G. Zibordi, and J.W. Brown, 2002a: The Seventh SeaWiFS Intercalibration Round-Robin Experiment (SIRREX-7), March 1999. *NASA Tech. Memo. 2002–206892, Vol. 17,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 69 pp.

——, G. Lazin, G. Zibordi, and S. McLean, 2002b: An evaluation of above- and in-water methods for determining water-leaving radiances. *J. Atmos. Ocean. Technol.,* **19,** 486–515.

——, and A. Morel, 2003: Platform and environmental effects on above- and in-water determinations of water-leaving radiances. *J. Atmos. Ocean. Technol.,* **20,** 187–205.

——, G. Zibordi, J-F. Berthon, D. D'Alimonte, D. van der Linde, and J.W. Brown, 2003: Tower-Perturbation Measurements in Above-Water Radiometry. *NASA Tech. Memo. 2003–206892, Vol. 23,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 35 pp.

Hsu, N.C., J.R. Herman, P.K. Bhartia, C.J. Seftor, O. Torres, A.M. Thompson, J.F. Gleason, T.F. Eck, and B.N. Holben, 1996: Detection of biomass burning smoke from TOMS measurements, *Geophys. Res. Lett.,* **23,** 745–748.

——, ——, O. Torres, B.N. Holben, D. Tanre, T.F. Eck, A. Smirnov, B. Chatenet, and F. Lavenu, 1999: Comparisons of the TOMS aerosol index with sun photometer aerosol optical thickness: results and applications, *J. Geophys. Res.,* **104,** 6,269–6,279.

——, W.D. Robinson, S.W. Bailey, and P.J. Werdell, 2000: "The description of the SeaWiFS absorbing aerosol index." In: McClain, C.R., R.A. Barnes, R.E. Eplee, Jr., B.A. Franz, N.C. Hsu, F.S. Patt, C.M. Pietras, W.D. Robinson, B.D. Schieber, G.M. Schmidt, M. Wang, S.W. Bailey, and P.J. Werdell, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 2. *NASA Tech. Memo. 2000–206892, Vol. 10,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 3–5.

Hu, C., K.L. Carder, and F.E. Müeller-Karger, 2000a: How precise are SeaWiFS ocean color estimates? Implications of digital noise errors. *Remote Sens. Environ.,* **76,** 239–249.

——, ——, and ——, 2000b: Atmospheric correction of SeaWiFS imagery over turbid coastal waters; a practical method. *Remote Sens. Environ.,* **74,** 195–206.

Hutchings, L., 1992: Fish harvesting in a variable, productive environment—searching for rules or searching for exceptions? *S. Afr. J. Sci.,* **12,** 297–318.

– I –

International Organization for Standardization, 1993: *Guide to the Expression of Uncertainty in Measurement,* International Organization for Standardization, Geneva, Switzerland, 101 pp.

IOCCG, 1998: Minimum Requirements for an Operational Ocean Colour Sensor for the open ocean. *Reports Int. Ocean-Colour Coordinating Group, Report Number 1,* 46 pp.

Iqbal, M., 1983: *An Introduction to Solar Radiation.* Academic Press, New York, 390 pp.

– J –

Jeffrey, S.W., 1972: Preparation and some properties of crystalline chlorophyll c_1 and chlorophyll c_2 from marine algae. *Biochim. Biophys. Acta.,* **279,** 15–33.

——, and F.T. Haxo, 1968: Photosynthetic pigments of symbiotic dinoflagellates (zooxanthallae) from corals and clams. *Biol. Bull.,* **135,** 149–165.

——, and G.F. Humphrey, 1975: New spectrophotometric equations for determining chlorophylls *a, b,* c_1 and c_2 in higher plants, algae and natural phytoplankton. *Biochem. Physiol. Pflanzen,* **167,** 191–194.

——, and J-M. LeRoi, 1997: Simple procedures for growing SCOR reference microalgal cultures. In: *Phytoplankton Pigments in Oceanography: Guidelines to Modern Methods.* S.W. Jeffrey, R.F.C. Mantoura, and S.W. Wright, Eds., UNESCO Publishing, Paris, 181–205.

——, and R.F.C. Mantoura, 1997: Appendix A: Pigment abbreviations used by SCOR WG 78. In: *Phytoplankton Pigments in Oceanography: Guidelines to Modern Methods.* S.W. Jeffrey, R.F.C. Mantoura, and S.W. Wright, Eds., UNESCO Publishing, Paris, 447–559.

——, ——, and S.W. Wright, Eds., 1997a: "Phytoplankton Pigments in Oceanography: Guidelines to Modern Methods." UNESCO Monograph in Oceanographic Methods. *Report for SCOR WH 78, SCOR UNESCO Monographs on Oceanographic Methodology.* Paris, France, 661 pp.

——, ——, and ——, 1997b: *Phytoplankton Pigments in Oceanography: Guidelines to Modern Methods.* UNESCO Publishing, Paris, 661 pp.

Johnson, B.C., S.S. Bruce, E.A. Early, J.M. Houston, T.R. O'Brian, A. Thompson, S.B. Hooker, and J.L. Mueller, 1996: The Fourth SeaWiFS Intercalibration Round-Robin Experiment, SIRREX-4, May 1995. *NASA Tech. Memo. 104566, Vol. 37,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 66 pp.

——, F. Sakuma, J.J. Butler, S.F. Biggar, J.W. Cooper, J. Ishida, and K. Suzuki, 1997: Radiometric measurement comparison using the Ocean Color and Temperature Scanner (OCTS) visible and near infrared integrating sphere. *J. Res. NIST,* **102,** 627–646.

——, P.-S. Shaw, S.B. Hooker, and D. Lynch, 1998a: Radiometric and engineering performance of the SeaWiFS Quality Monitor (SQM): A portable light source for field radiometers. *J. Atmos. Ocean. Technol.,* **15,** 1,008–1,022.

——, J.B. Fowler, and C.L. Cromer, 1998b: The SeaWiFS Transfer Radiometer (SXR). *NASA Tech. Memo. 1998–206892, Vol. 1,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 58 pp.

——, E.A. Early, R.E. Eplee, Jr., R.A. Barnes, and R.T. Caffrey, 1999a: The 1997 Prelaunch Calibration of SeaWiFS. *NASA Tech. Memo. 1999–206892, Vol. 4,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 51 pp.

——, H.W. Yoon, S.S. Bruce, P-S. Shaw, A. Thompson, S.B. Hooker, R.E. Eplee, Jr., R.A. Barnes, S. Maritorena, and J.L. Mueller, 1999b: The Fifth SeaWiFS Intercalibration Round-Robin Experiment (SIRREX-5), July 1996. *NASA Tech. Memo. 1999–206892, Vol. 7,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, 75 pp.

Joint Global Ocean Flux Study, 1991: JGOFS Core Measurements Protocols. *JGOFS Report No. 6,* Scientific Committee on Oceanic Research, 40 pp.

——, 1994: Protocols for the Joint Global Ocean Flux Study Core Measurements. Intergovernmental Oceanographic Commission, Scientific Committee on Oceanic Research. *Manual and Guides, UNESCO,* **29,** 91–96.

Jonasz, M., 1983: Particle-size distributions in the Baltic. *Tellus,* **35B,** 346–358.

Jones, R.D., 1991: An improved fluorescence method for the determination of nanomolar concentrations of ammonium in natural waters. *Limnol. Oceanogr.,* **36,** 814–819.

Junge, C.E., 1963: Air chemistry and radioactivity. Academic Press, New York, 382 pp.

– K –

Kahru, M., and B.G. Mitchell, 1998a: Spectral reflectance and absorption of a massive red tide off Southern California. *J. Geophys. Res.,* **103,** 21,601–21,609.

——, and ——, 1998b: Evaluation of instrument self-shading and environmental errors on ocean color algorithms. *Proc. Ocean Optics XIV,* Kona, Hawaii, S. Ackleson and J. Campbell, Eds., [Available on CD-ROM.]

——, and ——, 1999: Empirical chlorophyll algorithm and preliminary SeaWiFS validation for the California Current. *Int. J. Remote Sens.,* **20,** 3,423–3,429.

Kasten, F., 1966: A new table and approximate formula for relative optical air mass. *Arch. Meteorol. Geophys. Bioklimatol. Ser. B,* **14,** 206–223.

——, and A.T. Young, 1989: Revised optical air mass tables: An approximation formula. *Appl. Opt.,* **28,** 4,735–4,738.

Kearns, E., R. Riley, and C. Woody, 1996: A bio-optical time series collected in coastal waters for SeaWiFS calibration and validation: Large structure shadowing considerations. Halifax, Canada, *Proc. SPIE,* Ocean Optics XIII, **2963,** 697–702.

Keller, M.D., W.K. Bellows, and R.R.L. Guillard, 1989: Dimethylsulphide production in marine phytoplankton. In: *Biogenic Sulphur in the Environment.* E.S. Saltzman and W.J. Cooper, Eds., American Chemical Society, Washington, DC, 167–182.

Kieffer, H.H., and J.M. Anderson, 1998: "Use of the moon for spacecraft calibration over 350–2500 nm." In: Sensors, Systems, and Next-Generation Satellites II, *SPIE,* **3498,** 325–336.

——, T.C. Stone, R.A. Barnes, S. Bender, R.E. Eplee, Jr., J. Mendenhall, and L. Ong, 2002: "On-orbit radiometric calibration over time and between spacecraft using the Moon." In: Sensors, Systems, and Next Generation Satellites VIII, *SPIE,* **4881**, 301–313.

King, G.M., 1988: Distribution and metabolism of quaternary amines in marine sediments. In: *Nitrogen Cycling in Coastal Marine Environments.* T.H. Blackburn and J. Sorenson, Eds., John Wiley and Sons, Chichester, United Kingdom, 143–173.

Kiorbe, T., 1993: Turbulence, phytoplankton cell size, and the structure of pelagic food webs. *Adv. Mar. Biol.,* **29,** 1–72.

Kirk, J.T.O., 1994: Estimation of the absorption and the scattering coefficients of natural waters by use of underwater irradiance measurements, *Appl. Opt.,* **33,** 3,276–3,278.

Kirkwood, D.S., 1989: Simultaneous determination of selected nutrients in seawater. *ICES CM1989,* **29,** 12 pp.

——, 1994: The SAN plus segmented flow analyzer: Seawater analysis. Publication No. 07300194. *Ministry of Agriculture, Fisheries and Food (MAFF).* Lowestoft, UK. 34 pp.

Kishino, M., N. Okami, and S. Ichimura, 1985: Estimation of the spectral absorption coefficients of phytoplankton in the sea. *Bull. Mar. Sci.,* **37,** 634–642.

——, J. Ishizaka, S. Saitoh, Y. Senga, and M. Utashima, 1997: Verification plan of ocean color and temperature scanner atmospheric correction and phytoplankton pigment by moored optical buoy system, *J. Geophys. Res.,* **102,** 17,197–17,207.

Koepke, P., 1984: Effective reflectance of oceanic whitecaps. *Appl. Opt.,* **23,** 1,816–1,824.

Kolber, Z., and P.G. Falkowski, 1993: Use of active fluorescence to estimate phytoplankton photosynthesis *in situ. Limnol. Oceanogr.,* **38,** 1,646–1,665.

——, O. Prasil, and P.G. Falkowski, 1998: Measurements of variable fluorescence using fast repetition rate techniques: Defining methodology and experimental protocols. *Biochimica et Biophysica Acta,* **1,367,** 88–106.

Kostkowski, H.J., and F.E. Nicodemus, 1978: "An introduction to the measurement equation." In: F.E. Nicodemus, Ed., Self-Study Manual on Optical Radiation Measurements, Part 1–Concepts, *NBS Tech. Note 910-2,* U.S. Department of Commerce, National Institute of Standards and Technology, Washington, DC, 58–104.

Kou, L., D. Labrie, and P. Chylek, 1993: Refractive indices of water and ice in the 0.65-2.5 μm spectral range. *Appl. Opt.,* **32,** 3,531–3,540.

Kuring, N., M.R. Lewis, T. Platt, and J.E. O'Reilly, 1990: Satellite-derived estimates of primary production on the northwest Atlantic continental shelf. *Cont. Shelf Res.,* **10,** 461–484.

Kwok, J., 1987: *The Artificial Satellite Analysis Program,* Computer Software Management and Information Center, Athens, Georgia, 92 pp.

– L –

Land, P.E., and J.D. Haigh, 1996: Atmospheric correction over case 2 waters with an iterative fitting algorithm, *Appl. Opt.,* **35,** 5,443–5,451.

Landry, M.R., 1993: Estimating rates of growth and grazing mortality of phytoplankton by the dilution method. In: *Handbook of Methods in Aquatic Microbial Ecology,* P.F. Kemp, B.F. Sherr, E.B. Sherr, and J.J. Cole, Eds., Lewis Publishers, Boca Raton, Florida, 714–722.

Lane, A.P., and W.M. Irvine, 1973: Monochromatic phase curves and albedos for the lunar disk. *Astron. J.,* **78,** 267–277.

Lang, K.R., 1980: *Astrophysical Formulae,* Second Edition, Springer-Verlag, New York, 783 pp.

Larason, T.C., S.B. Bruce, and C.L. Cromer, 1996: The NIST high accuracy scale for absolute spectral response from 406 nm to 920 nm. *J. Res. NIST,* **101,** 133–140.

Latasa, M., R.R. Bidigare, M.E. Ondrusek, M.C. Kennicutt II, 1996: HPLC analysis of algal pigments: A comparison exercise among laboratories and recommendations for improved analytical performance. *Mar. Chem.,* **51,** 315–324.

——, ——, ——, and ——, 1999: On the measurement of pigment concentrations by monochromator and diode-array spectrophotometers. *Mar. Chem.,* **66,** 253–254.

Lazin, G., 1998: Correction Methods for Low-Altitude Remote Sensing of Ocean Color. *M.Sc. Thesis,* Dalhousie University, Halifax, Nova Scotia, 98 pp.

——, S. Hooker, G. Zibordi, S. McLean, and M.R. Lewis, 1998: In-water and above-water measurements of ocean color. *Proc. Ocean Optics XIV,* Office of Naval Research, Washington, DC, [Available on CD-ROM].

Leckner, B., 1978: The spectral distribution of solar radiation at the Earth's surface—Elements of a model. *Solar Energy,* **20,** 143–150.

Lee, Z.P., K.L. Carder, R.G. Steward, T.G. Peacock, C.O. Davis, and J.L. Mueller, 1996: Remote sensing reflectance and inherent optical properties of oceanic waters derived from above-water measurements. *Proc. SPIE,* **2963,** 160–166.

——, ——, ——, ——, ——, and J.S. Patch, 1998: An empirical ocean color algorithm for light absorption coefficients of optically deep waters. *J. Geophys. Res.,* **103,** 27,967–27,978.

Liu, B.Y.H., and K.W. Lee, 1976: Efficiency of membrane Nucleopore filters for submicrometer aerosols. *Env. Sci. Tech.,* **10,** 345–50.

Liu, K., 1978: "Earth oblateness modeling." In: Wertz, J.R., *Spacecraft Attitude Determination and Control,* D. Reidel Publishing Company, Dordrecht, Holland, 98–102.

Loisel, H., and A. Morel, 1998: Light scattering and chlorophyll concentration in case 1 waters: A reexamination. *Limnol. Oceanogr.,* **43,** 847–858.

– M –

Maffione, R.A., and D.R. Dana, 1997: Instruments and methods for measuring the backward-scattering coefficient of ocean waters. *Appl. Opt.,* **36,** 6,057–6,067.

Mantoura, R.F.C., and E.M.S. Woodward, 1983: Optimization of the indophenol blue method for the automated determination of ammonia in estuarine waters. *Estuar. Coastal Shelf Sci.,* **17,** 219–224.

——, and D.J. Repeta, 1997: Calibration method for HPLC. In: *Phytoplankton Pigments in Oceanography: Guidelines to Modern Methods.* S.W. Jeffrey, R.F.C. Mantoura, and S.W. Wright, Eds., UNESCO Publishing, Paris, 407–428.

——, S.W. Wright, S.W. Jeffrey, R.G. Barlow, and D.G. Cummings, 1997: "Phytoplankton pigments in oceanography: Guidelines to modern methods." In: S.W. Jeffrey, R.F.C. Mantour, and S.W. Wright, Eds., UNESCO Monograph in Oceanographic Methods. *Report for SCOR WH 78, SCOR-UNESCO Monographs on Oceanographic Methodology.* Paris, France, 662 pp.

Marggraf, W.A., and M. Griggs, 1969: Aircraft measurements and calculations of the total downward flux of solar radiation as a function of altitude. *J. Atmos. Sci.,* **26,** 469–477.

Maritorena, S., A. Morel, and B. Gentili, 1994: Diffuse reflectance of oceanic shallow water: Influence of water depth and bottom albedo. *Limnol. Oceanogr.,* **39,** 1,689–1,703.

——, and J.E. O'Reilly, 2000: "OC2v2: Update on the initial operational SeaWiFS chlorophyll *a* algorithm." In: O'Reilly, J.E., and 24 Coauthors, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 3. *NASA Tech. Memo. 2000–206892, Vol. 11,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 3–8.

Marquardt, D.W., 1963: An algorithm for least squares estimation of nonlinear parameters. *J. Soc. Ind. Appl. Math.,* **2,** 431–441.

McClain, C.R., 2000: "SeaWiFS postlaunch calibration and validation overview." In: McClain, C.R., E.J. Ainsworth, R.A. Barnes, R.E. Eplee, Jr., F.S. Patt, W.D. Robinson, M. Wang, and S.W. Bailey, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 1. *NASA Tech. Memo. 2000–206892, Vol. 9,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 4–12.

——, W.E. Esaias, W. Barnes, B. Guenther, D. Endres, S.B. Hooker, B.G. Mitchell, and R. Barnes, 1992: SeaWiFS Calibration and Validation Plan. *NASA Tech. Memo. 104566, Vol. 3,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 41 pp.

——, R.H. Evans, J.W. Brown, and M. Darzi, 1995: "SeaWiFS quality control masks and flags: initial algorithms and implementation strategy." In: McClain, C.R., W.E. Esaias, M. Darzi, F.S. Patt, R.H. Evans, J.W. Brown, K.R. Arrigo, C.W. Brown, R.A. Barnes, and L. Kumar, Case Studies for SeaWiFS Calibration and Validation, Part 4. *NASA Tech. Memo. 104566, Vol. 28,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 3–7.

——, M. Darzi, R.A. Barnes, R.E. Eplee, Jr., J.K. Firestone, F.S. Patt, W.D. Robinson, B.D. Schieber, R.H. Woodward, and E-n. Yeh, 1996: SeaWiFS Calibration and Validation Quality Control Procedures. *NASA Tech. Memo. 104566, Vol. 38,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 68 pp.

——, M.L. Cleave, G.C. Feldman, W.W. Gregg, S.B. Hooker, and N. Kuring, 1998: Science quality SeaWiFS data for global biosphere research. *Sea Technol.,* **39,** 10–16.

——, and G.S. Fargion, 1999a: SIMBIOS Project 1998 Annual Report. *NASA Tech. Memo. 1999–208645,* NASA Goddard Space Flight Center, Greenbelt, Maryland, 105 pp.

——, and ——, 1999b: SIMBIOS Project 1999 Annual Report, *NASA Tech. Memo. 1999–209486,* NASA Goddard Space Flight Center, Greenbelt, Maryland, 128 pp.

——, E.J. Ainsworth, R.A. Barnes, R.E. Eplee, Jr., F.S. Patt, W.D. Robinson, M. Wang, and S.W. Bailey, 2000a: SeaWiFS Postlaunch Calibration and Validation Analyses, Part 1. *NASA Tech. Memo. 2000–206892, Vol. 9,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 82 pp.

——, R.A. Barnes, R.E. Eplee, Jr., B.A. Franz, N.C. Hsu, F.S. Patt, C.M. Pietras, W.D. Robinson, B.D. Schieber, G.M. Schmidt, M. Wang, S.W. Bailey, and P.J. Werdell, 2000b: SeaWiFS Postlaunch Calibration and Validation Analyses, Part 2. *NASA Tech. Memo. 2000–206892, Vol. 10,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 57 pp.

McLean, S., S. Feener, J. Scrutton, M. Small, S. Hooker, and M. Lewis, 1998: SQM-II: A commercial portable light source for field radiometer quality assurance. *Proc. Ocean Opt. XIV,* [Available on CD-ROM], Office of Naval Research, Washington, DC.

Mitchell, B.G., and D.A. Kiefer, 1988: Chlorophyll-*a* specific absorption and fluorescence excitation spectra for light-limited phytoplankton, *Deep-Sea Res.,* **35,** 639–663.

——, and O. Holm-Hansen, 1991: Bio-optical properties of Antarctic Peninsula waters: differentiation from temperate ocean models. *Deep-Sea Res.,* **38,** 1,009–1,028.

——, M. Kahru, J. Wieland, and M. Stramska, 2002: "Determination of spectral absorption coefficients of particles, dissolved material and phytoplankton for discrete water samples." In: Mueller, J.L., and 39 Coauthors, Ocean Optics Protocols for Satellite Ocean Color Sensor Validation, Revision 3, Volume 2. *NASA Tech. Memo. 2002–210004/Rev3–Vol2,* NASA Goddard Space Flight Center, Greenbelt, Maryland, 231–257.

Mitchell-Innes, B.A., and A. Winter, 1987: Coccolithophores: A major phytoplankton component in mature upwelled waters off the Cape Peninsula, South Africa in March 1983. *Mar. Biol.,* **95,** 25–30.

Mobley, C.D., 1994: *Light and Water: Radiative Transfer in Natural Waters.* Academic Press, San Diego, California, 592 pp.

——, 1999: Estimation of the remote-sensing reflectance from above-surface measurements. *Appl. Opt.,* **38,** 7,442–7,455.

Molin, D., E. Guidoboni, and A. Lodovisi, 1992: "Mucilage and the phenomenon of algae in the history of the Adriatic: Periodization and the anthropic context (17th–20th centuries)." In: Wollenweider, R.A., R. Marchetti, R. Viviani, Eds., Marine Coastal Eutrophication. Proceedings of an International Conference, Bologna, Italy, 21–24 March
1990. *Sci. Total Environ., Suppl.,* 511–524.

Monahan, E.C., 1971: Oceanic whitecaps. *J. Phys. Oceanogr.,* **1,** 139–144.

Moore, C., J.R.V. Zaneveld, and J.C. Kitchen, 1992: Preliminary results from an in-situ spectral absorption meter. *Ocean Optics XI, Proc. SPIE,* **1750,** 330–337.

Moore, G.K., 1980: Satellite remote sensing of water turbidity. *Bull. Hydrolog. Sci.,* **25,** 407–421.

——, J. Aiken, N. Rees, and S. Hooker, 1997: Remote Sensing of Bio-Optical Provinces. Abstract. *Proc. 23rd Annual Conf. Exhib. Remote Sens. Soc.,* 545–550.

——, J. Aiken, and S.J. Lavender, 1999: The atmospheric correction of water colour and the quantitative retrieval of suspended particulate matter in Case II waters application to MERIS, *Int. J. Remote Sens.,* **20,** 1,713–1,734.

Moore, K.D., K.J. Voss, and H.R. Gordon, 1998: Spectral reflectance of whitecaps: Instrumentation, calibration, and performance in coastal waters. *J. Atmos. Ocean. Technol.,* **15,** 496–509.

——, ——, and ——, 2000: Spectral reflectance of whitecaps: Their contribution to water-leaving radiance. *J. Geophys. Res.,* **105,** 6,493–6,499.

Morel, A., 1974: "Optical properties of pure water and pure seawater." In: *Optical Aspects of Oceanography,* N.G. Jerlov and E. Steemann Nielsen, Eds., Academic Press, San Diego, California, 1–24.

——, 1980: In-water and remote measurements of ocean color. *Bound.-Layer Meteorol.,* **18,** 177–201.

——, 1988: Optical modeling of the upper ocean in relation to its biogenous matter content (Case I waters). *J. Geophys. Res.,* **93,** 10,749–10,768.

——, and L. Prieur, 1977: Analysis of variations in ocean color. *Limnol. Oceanogr.,* **22,** 709–722.

——, and A. Bricaud, 1981: Theoretical results concerning light absorption in a discrete medium, and application to specific absorption by phytoplankton. *Deep-Sea Res.,* **28,** 1,375–1,393.

——, and Y-H. Ahn, 1990: Optical efficiency factors of free-living marine bacteria: Influence of bacterioplankton upon the optical properties and particulate organic carbon in oceanic waters, *J. Mar. Res.,* **48,** 145–175.

——, and Y. Ahn, 1991: Optics of heterotrophic nanoflagellates and ciliates: A tentative assessment of their scattering role in oceanic waters compared to those of bacterial and algal cells. *J. Mar. Res.,* **49,** 177–202.

——, and B. Gentili, 1991: Diffuse reflectance of oceanic waters: its dependence on sun angle as influenced by the molecular scattering contribution. *Appl. Opt.* **30,** 4,427–4,438.

——, and ——, 1996: Diffuse reflectance of oceanic waters. III. Implication of bidirectionality for the remote sensing problem, *Appl. Opt.,* **35,** 4,850–4,862.

——, and D. Antoine, 2000: *Pigment index retrieval in Case 1 waters.* MERIS ATBD 2.9, ESA Doc. No. PO–TN–MEL–GS–0005, 9-1–9-20. [World Wide Web page.] From URL: `http://envisat.esa.int/instruments/meris/pdf/atbd_2_09.pdf` European Spage Agency, Issue 4, Rev. 2, 26 pp.

——, and S. Maritorena, 2001: Bio-optical properties of oceanic waters: a reappraisal. *J. Geophys. Res.,* **106,** 7,163–7,180.

——, and J.L. Mueller, 2002: "Normalized water-leaving radiance and remote sensing reflectance: Bidirectional reflectance and other factors." In: J.L. Mueller and G.S. Fargion, Eds., Ocean Optics Protocols for Satellite Ocean Color Sensor Validation, Revision 3, Vol. 2. *NASA Tech. Memo. 2002–210004,* NASA Goddard Space Flight Center, Greenbelt, Maryland, 183–210.

——, D. Antoine, and B. Gentilli, 2002: Bidirectional reflectance of oceanic waters: Accounting for Raman emission and varying particle scattering phase function. *Appl. Opt.,* **41,** 6,289–6,306.

Morris, A.W., R.J.M. Howland, and A.J. Bale, 1978: A filtration unit for use with continuous autoanalytical systems applied to highly turbid waters. *Estuar. Coastal Mar. Sci.,* **6,** 105–109.

Mueller, J.L., 1984: Effects of water reflectance at 670 nm on Coastal Zone Color Scanner (CZCS) aerosol radiance estimates off the coast of central California. *Ocean Optics VII, Proc. SPIE,* **489,** Bellingham, Washington, 179–186.

——, 1993: The First SeaWiFS Intercalibration Round-Robin Experiment, SIRREX-1, July 1992. *NASA Tech. Memo. 104566, Vol. 14,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 60 pp.

——, 1995a: "An integral method for analyzing irradiance and radiance attenuation profiles." In: Siegel, D.A., M.C. O'Brien, J.C. Sorensen, D.A. Konnoff, E.A. Brody, J.L. Mueller, C.O. Davis, W.J. Rhea, and S.B. Hooker, Results of the SeaWiFS Data Analysis Round-Robin (DARR-94), July 1994. *NASA Tech. Memo. 104566, Vol. 26,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 44–52.

——, 1995b: "Comparison of irradiance immersion coefficients for several Marine Environmental Radiometers (MERs)." In: Mueller, J.L., R.S. Fraser, S.F. Biggar, K.J. Thome, P.N. Slater, A.W. Holmes, R.A. Barnes, C.T. Weir, D.A. Siegel, D.W. Menzies, A.F. Michaels and G. Podesta, Case Studies for SeaWiFS Calibration and Validation, Part 3. *NASA Tech. Memo. 104566, Vol. 27,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 3–15.

——, 1996: MER-2040 SN 8728: Irradiance Immersion Factors, *CHORS Tech. Memo. 004–96,* Center for Hydro-Optics and Remote Sensing, San Diego State University, San Diego, California, 3 pp.

——, 2000a: "SeaWiFS algorithm for the diffuse attentuation coefficient, $K(490)$, using water-leaving radiances at 490 and 555 nm." In: O'Reilly, J.E., and 24 Coauthors, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 3. *NASA Tech. Memo. 2000–206892, Vol. 11,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 24–27.

——, 2000b: "In-water radiometric profile measurements and data analysis protocols." In: Fargion, G.S., and J.L. Mueller, Ocean Optics Protocols for Satellite Ocean Color Sensor Validation, Revision 2. *NASA Tech. Memo. 2000–209966,* NASA Goddard Space Flight Center, Greenbelt, Maryland, 87–97.

——, 2000c: "Overview of Measurement and Data Analysis Protocols." In: G.S. Fargion and J.L. Mueller, Ocean Optics Protocols for Satellite Ocean Color Sensor Validation, Revision 2. *NASA Tech. Memo. 2000–209966,* NASA Goddard Space Flight Center, Greenbelt, Maryland, 87–97.

——, 2002: "Overview of Measurement and Data Analysis Protocols." In: J.L. Mueller and G.S. Fargion, Ocean Optics Protocols for Satellite Ocean Color Sensor Validation, Revision 3, Volume 1. *NASA Tech. Memo. 2002–210004/Rev3–Vol1,* NASA Goddard Space Flight Center, Greenbelt, Maryland, 123–137.

——, 2003: "Overview of measurement and data analysis methods." In: Mueller, J.L., and 17 Coauthors, Ocean Optics Protocols for Satellite Ocean Color Sensor Validation, Revision 4, Volume III: Radiometric Measurements and Data Analysis Protocols. *NASA Tech. Memo. 2003–211621/ Rev4–Vol.III,* NASA Goddard Space Flight Center, Greenbelt, Maryland, 1–6.

——, and R.W. Austin, 1992: Ocean Optics Protocols for SeaWiFS Validation. *NASA Tech. Memo. 104566, Vol. 5,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 43 pp.

——, B.C. Johnson, C.L. Cromer, J.W. Cooper, J.T. McLean, S.B. Hooker, and T.L. Westphal, 1994: The Second SeaWiFS Intercalibration Round-Robin Experiment, SIRREX-2, June 1993. *NASA Tech. Memo. 104566, Vol. 16,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 121 pp.

——, and R.W. Austin, 1995: Ocean Optics Protocols for SeaWiFS Validation, Revision 1. *NASA Tech. Memo. 104566, Vol. 25,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 67 pp.

——, B.C. Johnson, C.L. Cromer, S.B. Hooker, J.T. McLean, and S.F. Biggar, 1996: The Third SeaWiFS Intercalibration Round-Robin Experiment, SIRREX-3, September 1994. *NASA Tech. Memo. 104566, Vol. 34,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 78 pp.

——, and C.C. Trees, 1997: "Revised SeaWiFS prelaunch algorithm for the diffuse attenuation coefficient $K(490)$." In: Yeh, E-n., R.A. Barnes, M. Darzi, L. Kumar, E.A. Early, B.C. Johnson, and J.L. Mueller, Case Studies for SeaWiFS Calibration and Validation, Part 4. *NASA Tech. Memo. 104566, Vol. 41,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 18–21.

——, and A. Morel, 2002: "Fundamental Definitions, Relationships and Conventions." In: J.L. Mueller and G.S. Fargion, Ocean Optics Protocols for Satellite Ocean Color Sensor Validation, Revision 3, Volume 1. *NASA Tech. Memo. 2002–210004/Rev3–Vol1,* NASA Goddard Space Flight Center, Greenbelt, Maryland, 10–28.

——, C. Pietras, S.B. Hooker, D.K. Clark, A. Morel, R. Frouin, B.G. Mitchell, R.R. Bidigare, C. Trees, J. Werdell, G.S. Fargion, R. Arnone, R.W. Austin, S. Bailey, W. Broenkow, S.W. Brown, K. Carder, C. Davis, J. Dore, M. Feinholz, S. Flora, Z.P. Lee, B. Holben, B.C. Johnson, M. Kahru, D.M. Karl, Y.S. Kim, K.D. Knobelspiesse, C.R. McClain, S. McLean, M. Miller, C.D. Mobley, J. Porter, R.G. Steward, M. Stramska, L. Van Heukelem, K. Voss, J. Wieland, M.A. Yarbrough, and M. Yuen, 2002a: Ocean Optics Protocols for Satellite Ocean Color Sensor Validation, Revision 3, Volume 1. *NASA Tech. Memo. 2002–210004/Rev3–Vol1,* J.L. Mueller and G.S. Fargion, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 137 pp.

——, C. Davis, R. Arnone, R. Frouin, K. Carder, Z.P. Lee, R.G. Steward, S. Hooker, C.D. Mobley, and S. McLean, 2002b: "Above-Water Radiance and Remote Sensing Reflectance Measurement and Analysis Protocols." In: J.L. Mueller and G.S. Fargion, Ocean Optics Protocols for Satellite Ocean Color Sensor Validation, Revision 3, Volume 2. *NASA Tech. Memo. 2002–210004/Rev3–Vol2,* NASA Goddard Space Flight Center, Greenbelt, Maryland, 171–182.

Muller-Karger, F., C.R. McClain, and P. Richardson, 1988: The dispersal of the Amazon water. *Nature,* **333,** 56–59.

– N –

Neckel, H., and D. Labs, 1984: The solar radiation between 3,300 and 12,500Å. *Solar Physics,* **90,** 205–258.

Nelson, G., and L. Hutchings, 1983: The Benguela upwelling area. *Prog. Oceanogr.,* **12,** 333–356.

——, A.J. Boyd, J.J. Agenbag, and C.M. Duncombe Rae, 1998: An upwelling filament north-west of Cape Town, South Africa. *S. Afr. J. Sci.,* **19,** 75–88.

Nicodemus, F.E., 1978: "More on the distribution of optical radiation with respect to position and direction." In: F.E. Nicodemus, Ed., Self-Study Manual on Optical Radiation Measurements, Part 1—Concepts, *NBS Tech. Note 910-2,* U.S. Department of Commerce, National Institute of Standards and Technology, Washington, DC, 1–57.

– O –

O'Reilly, J.E., and C. Zetlin, 1998: Seasonal, Horizontal, and Vertical Distribution of Phytoplankton Chlorophyll *a* in the Northeast U.S. Continental Shelf Ecosystem. *NOAA Tech. Report NMFS,* **39,** Fishery Bulletin, 120 pp.

——, S. Maritorena, B.G. Mitchell, D.A. Siegel, K.L. Carder, S.A. Garver, M. Kahru, and C. McClain, 1998: Ocean color chlorophyll algorithms for SeaWiFS. *J. Geophys. Res.,* **103,** 24,937–24,953.

——, and 24 Coauthors, 2000a: SeaWiFS Postlaunch Calibration and Validation Analyses, Part 3. *NASA Tech. Memo. 2000–206892, Vol. 11,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, 49 pp.

——, S. Maritorena, M.C. O'Brien, D.A. Siegel, D. Toole, B.G. Mitchell, M. Kahru, F.P. Chavez, P. Strutton, G.F. Cota, S.B. Hooker, C.R. McClain, K.L. Carder, F. Müller-Karger, L. Harding, A. Magnuson, D. Phinney, G.F. Moore, J. Aiken, K.R. Arrigo, R. Letelier, M. Culver, 2000b: "Ocean color chlorophyll *a* algorithms for SeaWiFS, OC2, and OC4: Version 4," In: O'Reilly, J.E., and 24 Coauthors, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 3. *NASA Tech. Memo. 2000–206892, Vol. 11,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center,
Greenbelt, Maryland, 9–23.

O'Shea, D.C., 1985: *Elements of Modern Optical Design,* John Wiley and Sons, New York, 402 pp.

Owens, N.J.P., and A.P. Rees, 1989: Determination of Nitrogen-15 at submicrogram levels of nitrogen using automated continuous-flow isotope ratio mass spectrometry. *Analyst,* **114,** 1,655–1,657.

– P –

Pagano, T.S., and R.M. Durham, 1993: Moderate Resolution Imaging Spectroradiometer (MODIS). *SPIE,* **1939,** 2–17.

Pak, H., J.R.V. Zaneveld, and G.F. Beardsley, 1971: Mie scattering by suspended clay particles, *J. Geophys. Res.,* **76,** 5,065–5,069.

Palmer, K.F., and D. Williams, 1974: Optical properties of water in the near infrared. *J. Opt. Soc. Amer.,* **66,** 1,107–1,110.

Partensky, F., N. Hoepffner, W.K.W. Li, O. Ulloa, and D. Vaulot, 1993: Photoacclimation of *Prochlorococcus sp.* (Prochlorophyta) strains isolated from the North Atlantic and the Mediterranean Sea. *Plant Physiol.,* **101,** 285–296.

Patt, F.S., 1999: "Assessment of geolocation for SeaWiFS and OCTS using island targets." *Proc. CNES Seminar, In-orbit characterization of optical imaging systems,* Bordeaux, France, November 1999.

——, 2002: Navigation Algorithms for the SeaWiFS Mission. *NASA Tech. Memo. 2002–206892, Vol. 16,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 17 pp.

——, and W.W. Gregg, 1994: Exact closed-form geolocation algorithm for Earth survey sensors. *Inter. J. Remote Sens.,* **15,** 3,719–3,734.

——, R.H. Woodward, and W.W. Gregg, 1997: An automated method for navigation assessment for Earth survey sensors using island targets. *Inter. J. Remote Sens.,* **18,** 3,311–3,336.

——, and S. Bilanow, 1999: Attitude sensor alignment for OrbView-2 using island targets. Proc. 1999 Flight Mechanics Symp., *NASA Conf. Pub. 1999–209986,* NASA Goddard Space Flight Center, Greenbelt, Maryland, 479–493.

——, and S. Bilanow, 2001: "Horizon scanner triggering height analysis for OrbView-2." Proc. 2001 Flight Mechanics Symp., *NASA Contractor Rept., 2001-209986,* NASA Goddard Space Flight Center, Greenbelt, Maryland, 559–573.

——, B.A. Franz., W.D. Robinson, and J. Gales, 2003: "Level-1a and Level-3 Processing Changes." In: Patt, F.S., R.A. Barnes, R.E. Eplee, Jr., B.A. Franz, W.D. Robinson, G.C. Feldman, S.W. Bailey, J. Gales, P.J. Werdell, M. Wang, R. Frouin, R.P. Stumpf, R.A. Arnone, R.W. Gould, Jr., P.M. Martinolich, V. Ransibrahmanakul, J.E. O'Reilly, and J.A. Yoder, Algorithm Updates for the Fourth SeaWiFS Data Reprocessing, *NASA Tech. Memo. 2003–206892, Vol. 22,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 41–45.

Pegau, W.S., D. Gray, and J.R.V. Zaneveld, 1997: Absorption of visible and near-infrared light in water: The dependence on temperature and salinity. *Appl. Opt.,* **36,** 6,035–6,046.

Petzold, T.J., and R.W. Austin, 1988: Characterization of MER 1032. *Tech. Memo. EN–001–88t*, Vis. Lab., Scripps Institution of Oceanography, La Jolla, California, 56 pp. plus appendices.

Pinkerton, M.H., and J. Aiken, 1999: Calibration and validation of remotely-sensed observations of ocean colour from a moored data buoy, *J. Atmos. Oceanic Technol.,* **16,** 915–923.

Pitcher, G.C., A.J. Boyd, D.A. Horstman, and B.A. Mitchell-Innes, 1998: Subsurface dinoflagellate populations, frontal blooms and the formation of red tide in the southern Benguela upwelling system. *Mar. Ecol. Prog. Ser.,* **172,** 253–264.

Platt, T., C.M. Caverhill, and S. Sathyendranath, 1991: Basin-scale estimates of oceanic primary production by remote sensing: The North Atlantic. *J. Geophys. Res.,* **96,** 15,147–15,159.

Podesta, G., 1995: "SeaWiFS Global Fields: What's In a Day?" In: Mueller, J.L., R.S. Fraser, S.F. Biggar, K.J. Thome, P.N. Slater, A.W. Holmes, R.A. Barnes, C.T. Weir, D.A. Siegel, D.W. Menzies, A.F. Michaels, and G. Podesta: Case Studies for SeaWiFS Calibration and Validation, Part 3. *NASA Tech. Memo. 104566, Vol. 27,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 34–42.

Pope, R.M., and E.S. Fry, 1997: Absorption spectrum (380–700 nm) of pure water, II. Integrating cavity measurements, *Appl. Opt.,* **36,** 8,710–8,723.

Press, W.H., and S.A. Teukolsky, 1992: Fitting straight line data with errors in both coordinates. *Computers in Phys.,* **6,** 274–276.

——, ——, W.T. Vettering, and B.P. Flannery, 1992: *Numerical Recipes in C: The Art of Scientific Computing.* Cambridge University Press, 994 pp.

Priesendorfer, R.W., and C.D. Mobley, 1986: Albedos and glitter patterns of a wind roughened sea surface. *J. Phys. Oceanogr.,* 16, 1,293–1,316.

– Q –

Quinn, P.K., 1988: Simultaneous observations of ammonia in the ocean and atmosphere in the remote marine environment. *Ph.D. Thesis,* University of Washington, Seattle, Washington, 138 pp.

——, R.J. Charlson, and T.S. Bates, 1988: Simultaneous observations of ammonia in the atmosphere and ocean. *Nature,* **335,** 336–338.

——, T.S. Bates, J.E. Johnson, J.E. Covert, and R.J. Charlson, 1990: Interactions between the sulfur and reduced nitrogen cycles over the central Pacific Ocean. *J. Geophys. Res.,* **95,** 16,405–16,416.

– R –

Remer, L.A., Y.J. Kaufman, and B.N. Holben, 1996: "The size distribution of ambient aerosol particles: smoke vs. urban/industrial aerosol." In: *Biomass Burning and Global Change,* J.S. Levine, Ed., MIT Press, Cambridge, Massachusetts, 519–530.

Reuter, R., 1980: Characterization of marine particle suspensions by light scattering. II. Experimental results. *Oceanol. Acta,* **3,** 325–332.

Ricker, W.E., 1973: Linear regressions in fishery research. *J. Fish. Res. Board Canada,* **30,** 409–434.

Riley, T., and S. Bailey, 1998: The Sixth SeaWiFS/SIMBIOS Intercalibration Round-Robin Experiment (SIRREX-6) August–December 1997. *NASA Tech. Memo. 1998–206878,* NASA Goddard Space Flight Center, Greenbelt, Maryland, 26 pp.

Robins, D.B., A.J. Bale, G.F. Moore, N.W. Rees, S.B. Hooker, C.P. Gallienne, A.G. Westbrook, E. Marañón, W.H. Spooner, and S.R. Laney, 1996: AMT-1 Cruise Report and Preliminary Results. *NASA Tech. Memo. 104566, Vol. 35,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 87 pp.

Robinson, N., 1966: *Solar Radiation.* American Elsevier, New York, 347 pp.

Robinson, W.D., and M. Wang, 2000: "Vicarious calibration of SeaWiFS band 7." In: McClain, C.R., E.J. Ainsworth, R.A. Barnes, R.E. Eplee, Jr., F.S. Patt, W.D. Robinson, M. Wang, and S.W. Bailey, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 1. *NASA Tech. Memo. 2000–206892, Vol. 9,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, 38–42.

——, G.M. Schmidt, C.R. McClain, and P.J. Werdell, 2000: "Changes made in the operational SeaWiFS processing." In: McClain, C.R., R.A. Barnes, R.E. Eplee, Jr., B.A. Franz, N.C. Hsu, F.S. Patt, C.M. Pietras, W.D. Robinson, B.D. Schieber, G.M. Schmidt, M. Wang, S.W. Bailey, and P.J. Werdell, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 2. *NASA Tech. Memo. 2000–206892, Vol. 10,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 12–28.

Ruddick, K.G., F. Ovidio, and M. Rijkeboer, 2000: Atmospheric correction of SeaWiFS imagery for turbid coastal and inland waters. *Appl. Opt.,* **39,** 897–912.

– S –

Sagan, S., A.R. Weeks, I.S. Robinson, G.F. Moore, and J. Aiken, 1995: The relationships between the beam attenuation coefficient and chlorophyll concentration and reflectance in Antarctic waters. *Deep-Sea Res.,* **42,** 983–996.

Sakuma, F., B.C. Johnson, S.F. Biggar, J.J. Butler, J.W. Cooper, M. Hiramatsu, and K. Suzuki, 1996: EOS AM-1 preflight radiometric measurement comparison using the Advanced Spaceborne Thermal Emission and Reflection radiometer (ASTER) visible/near-infrared integrating sphere. *SPIE,* **2820,** 184–196.

Saunders, R.D., and J.B. Shumaker, 1977: Optical Radiation Measurements: The 1973 NBS Scale of Spectral Irradiance. *NBS Tech. Note 594-13,* National Bureau of Standards, Gaithersburg, Maryland, 29 pp.

——, and ——, 1984: Automated radiometric linearity tester. *Appl. Opt.,* **23,** 3,504–3,506.

Schield, M.A., J.W. Freeman, and A.J. Dessler, 1969: A source for field-aligned currents at auroral latitudes. *J. Geophys. Res.,* **74,** 247–256.

Schiller, H., and R. Doerffer, 1999: Neural network for emulation of an inverse model—operational derivation of Case II water properties from MERIS data. *Int. J. Remote Sens.,* **20,** 1,735–1,746.

Shannon, L.V., 1985: The Benguela ecosystem. Part I. Evolution of the Benguela, physical features and processes. *Oceanogr. Mar. Biol. Ann. Rev.,* **23,** 105–182.

——, and G. Nelson, 1996: The Benguela: Large scale features and processes and system variability. In: Wefer, G., W.H. Berger, G. Siedler, and D.J. Webb, Eds., *The South Atlantic: Present and Past Circulation.* Springer, Berlin, 163–210.

Shaw, P-S., B.C. Johnson, S.B. Hooker, and D. Lynch, 1997: The SeaWiFS Quality Monitor—a portable field calibration light source. *Proc. SPIE,* **2963,** 772–776.

Shettle, E.P., and R.W. Fenn, 1979: Models for the Aerosols of the Lower Atmosphere and the Effects of Humidity Variations on Their Optical Properties. *AFGL-TR-79-0214,* U.S. Air Force Geophysics Laboratory, Hanscom Air Force Base, Massachusetts, 94 pp.

Shimada, M., H. Oaku, Y. Mitomi, H. Murakami, A. Mukaida, J. Ishizaka, H. Kawamura, T. Tanaka, M. Kishino, and H. Fukushima, 1998: Calibration and validation of Ocean Color Version-3 Product from ADEOS OCTS, *J. Oceanogr.,* **54,** 401–416.

Shuster, M.D., and S.D. Oh, 1981: Three-axis attitude determination from vector observations, *J. Guidance and Control,* **4**, 70–77.

Siegel, D.A., M.C. O'Brien, J.C. Sorensen, D.A. Konnoff, E.A. Brody, J.L. Mueller, C.O. Davis, W.J. Rhea, and S.B. Hooker, 1995: Results of the SeaWiFS Data Analysis Round-Robin (DARR-94), July 1994. *NASA Tech. Memo. 104566, Vol. 26,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 58 pp.

——, M. Wang, S. Maritorena, and W. Robinson, 2000: Atmospheric correction of satellite ocean color imagery: The black pixel assumption. *Appl. Opt.,* **39,** 3,582–3,591.

Sildam, J., M.R. Lewis, and J.C. Cullen, 1998: Multiresolution analysis of diffuse attenuation coefficient with an emphasis on surface and deep layers, Ocean Optics XIV.

Slater, P.N., and J.M. Palmer, 1991: Solar-diffuser panel and ratioing radiometer approach to satellite sensor on-board calibration. *SPIE,* **1493,** 100–105.

——, Biggar, S.F., J.M. Palmer, and K.J. Thome, 2001: Unified approach to absolute radiometric calibration in the solar-reflective range. *Remote Sens. Environ.,* **77,** 293–303.

Sloss, P.W., 1988: Digital Relief of the Surface of the Earth. *Data Announcement 88-MGG-02,* NOAA, National Geophysical Data Center, Boulder, Colorado, 2 pp.

——, 2001: ETOPO2 Database on CD-ROM, NOAA, National Geophysical Data Center, Boulder, Colorado, USA.

Smayda, T.J., 1978: Estimating cell numbers. What to count? In: Sournia, A., Ed., *Phytoplankton Manual,* UNESCO Monographs on Oceanographic Methodology, **6,** 165–166.

Smirnov, A., B.N. Holben, O. Dubovik, N.T. O'Neill, L.A. Remer, T.F. Eck, I. Slustsker, and D. Savoie, 2000: Measurement of atmospheric optical parameters on U.S. Atlantic coast sites, ships and Bermuda during TARFOX, *J. Geophys. Res.,* **105,** 9,887–9,901.

Smith, E.V.P., and D.M. Gottlieb, 1974: Solar flux and its variation. *Space Sci. Rev.,* **16,** 771–802.

Smith, R.C., 1969: An underwater spectral irradiance collector. *J. Mar. Res.,* **27,** 341–351.

——, and K.S. Baker, 1978: Optical classification of natural waters. *Limnol. Oceanogr.,* **23,** 260–267.

——, and ——, 1981: Optical properties of the clearest natural waters (200–800 nm). *Appl. Opt.,* **20,** 177–184.

——, and W.H. Wilson, 1981: Ship and satellite bio-optical research in the California Bight. *Oceanography from Space,* J.F.R. Gower, Ed., Plenum Press, 281–294.

——, and ——, 1984: The analysis of ocean optical data. *Ocean Optics VII,* M. Blizard, Ed., *SPIE,* **478,** 119–126.

——, and ——, 1986: Analysis of ocean optical data II. *Ocean Optics VIII,* P.N. Slater, Ed., *SPIE,* **637,** 95–107.

——, D.A. Menzies, and C.R. Booth, 1997: Oceanographic Bio-Optical Profiling System II, Ocean Optics XIII, S.G. Ackelson and R. Frouin, Eds., *Proc. SPIE,* **2963,** 777–789.

Spanier, J., and E.M. Gelbard, 1969: *Monte Carlo Principles and Neutron Transport Problems.* Addison-Wesley, Reading, Massachusetts, 234 pp.

Stout, D.F., 1976: *Handbook of Operational Amplifier Design,* M. Kaufman, Ed., McGraw-Hill, New York, 317 pp.

Stramski, D., and D.A. Kiefer, 1991: Light scattering by microorganisms in the open ocean, *Prog. Oceanogr.,* **28,** 343–383.

——, and C.D. Mobley, 1997: Effects of microbial particles on ocean optics: A database of single-particle optical properties, *Limnol. Oceanogr.,* **42,** 538–549.

Strickland, J.D.H., and T.R. Parsons, 1972: *A Practical Handbook of Sea Water Analysis.* Fish. Res. Board. Canada, 310 pp.

Stumpf, R.P., and M.A. Tyler, 1988: Satellite detection of bloom and pigment distributions in estuaries. *Remote Sens. Environ.,* **24,** 385–404.

——, and J.R. Pennock, 1989: Calibration of a general optical equation for remote sensing of suspended sediment in a moderately turbid estuary. *J. Geophys. Res.,* **94,** 14,363–14,371.

Sturm, B., and G. Zibordi, 2002: SeaWiFS atmospheric correction by an approximate model and vicarious calibration, *Int. J. Remote Sens.,* **23,** 489–501.

Subramaniam, A., R.R. Hood, C.W. Brown, E.J. Carpenter, and D.G. Capone, 2001: Detecting *Trichodesmium* blooms in SeaWiFS imagery. *Deep-Sea Res.,* **49,** 107–121.

Sydor, M., and R.A. Arnone, 1997: Effect of suspended particulate and dissolved organic matter on remote sensing of coastal and riverine waters. *Appl. Opt.,* **36,** 6,905–6,912.

– T –

Tanré, D., M. Herman, P.Y. Deschamps, and A. de Leffe, 1979: Atmospheric modeling for space measurements of ground reflectances, including bidirectional properties. *Appl. Opt.,* **18,** 213,587–213,597.

——, C. Deroo, P. Duhaut, M. Herman, J.J. Morcrette, J. Perbos, and P.Y. Deschamps, 1990: Description of a computer code to simulate the satellite signal in the solar spectrum: The 5S code. *Int. J. Remote Sens.,* **11,** 656–668.

Tassan, S., and M. Ferrari, 1995: An alternative approach to absorption measurements of aquatic particles retained on filters. *Limnol. Oceanogr.,* **40,** 1,358–1,368.

——, and ——, 2002: A Sensitivity analysis of the "Transmittance-Reflectance" method for measuring light absorption by aquatic particles. *J. Plankton Res.,* **24,** 757–774.

Taylor, B.N., and C.E. Kuyatt, 1994: Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results. *NIST Tech. Note 1297,* U.S. Department of Commerce, National Institute of Standards and Technology, Washington, DC, 20 pp.

Tegen, I., and A.A. Lacis, 1996: Modeling of particle size distribution and its influence on the radiative properties of mineral dust aerosol, *J. Geophys. Res.,* **101,** 19,237–19,244.

Thompson, A., and H-M. Chen, 1994: Beamcon III, a linearity measurement instrument for optical detectors. *J. Res. NIST,* **99,** 751–755.

Thuillier, G., M. Hersé, P.C. Simon, D. Labs, H. Mandel, and D. Gillotay, 1998a: Observation of the solar spectral irradiance from 200 to 870 nm during the ATLAS 1 and 2 missions by the SOLSPEC spectrometer. *Metrologia,* **35,** 689–695.

——, ——, ——, ——, ——, ——, and T. Foujols, 1998b: The visible solar spectral irradiance from 350 to 850 nm as measured by the SOLSPEC spectrometer during the Atlas I mission. *Solar Physics,* **177,** 41–61.

——, ——, ——, ——, ——, ——, and ——, 2003: The solar spectral irradiance from 200 to 2400 nm as measured by the SOLSPEC spectrometer from the Atlas 1-2-3 and EURECA missions. *Solar Physics,* **214,** 1–22.

Tsai, B.K., and B.C. Johnson, 1998: Radiometric traceability for fundamental measurements: Estimation and evaluation of combined standard uncertainties, *Metrologia,* **35,** 587–593.

Twardowski, M.S., J.M. Sullivan, P.L. Donaghay, and J.R. Zaneveld, 1999: Microscale quantification of the absorption by dissolved and particulate material in coastal waters with AC-9, *J. Atmos. Oceanic Technol.,* **16,** 691–707.

Tyler, J.E., and R.C. Smith, 1970: *Measurements of Spectral Irradiance Underwater.* Gordon and Breach, New York, 103 pp.

– U –

UNESCO, 1981: Tenth report of the joint panel on oceanographic tables and standards. Sidney, British Columbia, September 1980, *UNESCO Tech. Papers Mar. Sci.,* **36,** 25 pp.

– V –

Vance, T.C., J.D. Schumacher, P.J. Stabeno, C.T. Baier, T. Wyllie-Echeverria, C.T. Tynan, R.D. Brodeur, J.M. Napp, K.O. Coyle, M.B. Decker, G.L. Hunt, Jr., D. Stockwell, T.E. Whitledge, M. Jump, and S. Zeeman, 1998: Aquamarine waters recorded for the first time in the Eastern Bering Sea. *EOS,* **79,** 121 and 126.

van der Linde, D., 2003: The AAOT Deployment Systems: An Overview. *EUR Report 20548 EN,* Joint Research Centre, Ispra, Italy, 13 pp.

Van Heukelem, L., and C.S. Thomas, 2001: Computer-assisted HPLC method development with applications to the isolation and analysis of marine phytoplankton pigments. *J. Chrom. A.,* **910,** 31–49.

Van Neste, A., R.A. Duce, and C. Lee, 1987: Methylamines in the marine atmosphere. *Geophys. Res. Lett.,* **14,** 711–714.

Verity, P.G., D.K. Stoecker, M.E. Sieracki, and J.R. Nelson, 1996: Microzooplankton grazing of primary production at 140°W in the equatorial Pacific. *Deep-Sea Res. II,* **43,** 1,227–1,255.

Vermote, E.F., D. Tanre, J.L. Deuze, M. Herman, and J-J. Morcrette, 1997: Second simulation of the satellite signal in the solar spectrum, `6S`: An Overview. *IEEE Trans. Geosci. Remote Sens.,* **35,** 675–686.

Vesk, M., and S.W. Jeffrey, 1987: Ultrastructure and pigments of two strains of the picoplanktonic alga *Pelagococcus subviridis* (Chrysophyceae). *J. Phycol.,* **23,** 322–336.

Vidussi, F., H. Claustre, J. Bustillos-Guzmán, C. Cailliau, and J.C. Marty, 1996: Determination of chlorophylls and carotenoids of marine phytoplankton: separation of chlorophyll *a* from divinyl-chlorophyll *a* and zeaxanthin from lutein. *J. Plankton Res.,* **18,** 2,377–2,382.

——, ——, B.B. Manca, A. Luchetta, and J-C. Marty, 2001: Phytoplankton pigment distribution in relation to upper thermocline circulation in the eastern Mediterranean Sea during winter. *J. Geophys. Res.,* **106,** 19,939–19,956.

Vigroux, E., 1953: *Contribution à l'étude expérimentale de l'absorption de l'ozone. Ann. Phys.,* **8,** 709–762.

Voss, K.J., 1992: A spectral model of the beam attenuation coefficient in the ocean and coastal areas, *Limnol. Oceanogr.,* **37,** 501–509.

– W, X –

Walker, J.H., R.D. Saunders, and A.T. Hattenburg, 1987a: Spectral Radiance Calibrations. *NBS Special Publication 250-1,* U.S. Department of Commerce, National Institute of Standards and Technology, Washington, DC, 68 pp.

——, ——, J.K. Jackson, and D.A. McSparron, 1987b: Spectral Irradiance Calibrations. *NBS Special Publication 250-20,* U.S. Department of Commerce, National Institute of Standards and Technology, Washington, DC, 37 pp., plus Appendices.

——, and A. Thompson, 1994: Improved automated current control for standard lamps. *J. Res. NIST,* **99,** 255–261.

Wang, M., 1999a: Atmospheric correction of ocean color sensors: Computing atmospheric diffuse transmittance, *Appl. Opt.,* **38,** 451–455.

——, 1999b: A sensitivity study of the SeaWiFS atmospheric correction algorithm: Effects of spectral band variations. *Remote Sens. Environ.,* **67,** 348–359.

——, 2000: "The SeaWiFS atmospheric correction algorithm updates." In: McClain, C.R., E.J. Ainsworth, R.A. Barnes, R.E. Eplee, Jr., F.S. Patt, W.D. Robinson, M. Wang, and S.W. Bailey, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 1. *NASA Tech. Memo. 2000–206892, Vol. 9,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 57–63.

——, 2003: Correction of artifacts in the SeaWiFS atmospheric correction: Removing the discontinuity in the derived products. *Remote Sens. Environ.,* **84,** 603–611.

——, and H.R. Gordon, 1994: A simple, moderately accurate, atmospheric correction algorithm for SeaWiFS. *Remote Sens. Environ.,* **50,** 231–239.

——, and B. Franz, 2000: Comparing the ocean color measurements between MOS and SeaWiFS: A vicarious intercalibration approach for MOS. *IEEE Trans. Geosci. Remote Sens.,* **38,** 184–197.

——, and S.W. Bailey, 2000: "Correction of the sun glint contamination on the SeaWiFS aerosol optical thickness retrievals." In: McClain, C.R., E.J. Ainsworth, R.A. Barnes, R.E. Eplee, Jr., F.S. Patt, W.D. Robinson, M. Wang, and S.W. Bailey, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 1. *NASA Tech. Memo. 2000–206892, Vol. 9,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 64–68.

——, ——, C.M. Pietras, and C.R. McClain, 2000a: "SeaWiFS aerosol optical thickness match-up analyses." In: McClain, C.R., R.A. Barnes, R.E. Eplee, Jr., B.A. Franz, N.C. Hsu, F.S. Patt, C.M. Pietras, W.D. Robinson, B.D. Schieber, G.M. Schmidt, M. Wang, S.W. Bailey, and P.J. Werdell, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 2. *NASA Tech. Memo. 2000–206892, Vol. 10,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 39–44.

——, B.A. Franz, and R.A. Barnes, 2000b: "Analysis of the SeaWiFS spectral band-pass effects." In: McClain, C.R., R.A. Barnes, R.E. Eplee, Jr., B.A. Franz, N.C. Hsu, F.S. Patt, C.M. Pietras, W.D. Robinson, B.D. Schieber, G.M. Schmidt, M. Wang, S.W. Bailey, and P.J. Werdell, SeaWiFS Postlaunch Calibration and Validation Analyses, Part 2. *NASA Tech. Memo. 2000–206892, Vol. 10,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 6–11.

——, and S.W. Bailey, 2001: Correction of sun glint contamination on the SeaWiFS ocean and atmospheric products. *Appl. Opt.,* **40,** 4,790–4,798.

——, B.A. Franz, R.A. Barnes, and C.R. McClain, 2001: Effect of spectral bandpass on SeaWiFS-retrieved near-surface optical properties of the ocean. *Appl. Opt.,* **40,** 343–348.

Watanabe, T., A. Hongu, K. Honda, N. Masataka, M. Konno, and S. Saitoh, 1984: Preparation of chlorophylls and pheophytins by isocratic liquid chromatography. *Anal. Chem.,* **56,** 251–256.

Waters, K.J., R.C. Smith, and M.R. Lewis, 1990: Avoiding ship-induced light-field perturbation in the determination of oceanic optical properties, *Oceanogr.,* **3,** 18–21.

Wehrli, C., 1985: *Extraterrestrial Solar Spectrum,* Publ. 615, *Physikalisch-Meterologisches Observatorium* World Radiation Center, Davos-Dorf, Switzerland, 23 pp.

Welschmeyer, N.A., 1994: Fluorometric analysis of chlorophyll-*a* in the presence of chlorophyll-*b* and pheopigments. *Limnol. Oceanogr.,* **39,** 1,985–1,992.

Wertz, J.R., 1978: Solar system constants (Appendix L). *Spacecraft Attitude Determination and Control,* D. Reidel Publishing Company, Dordrecht, Holland, 819.

Westlake, D.F., 1965: Some problems in the measurement of radiation under water: A review. *Photochem. Photobiol.,* **4,** 849–868.

WETLabs, 2000: *AC-9 Protocol Document, Revision D.* Western Environmental Technology Laboratories (WETLabs), Philomath, Oregon, 47 pp.

——, 2002: *AC-9 Protocol Document.* [World Wide Web page.] From URL: `http://www.wetlabs.com/Products/pub/ac9/` WETLabs, Inc., Philomath, Oregon.

Woodward, R.H., R.A. Barnes, C.R. McClain, W.E. Esaias, W.L. Barnes, and A.T. Mecherikunnel, 1993: Modeling of the SeaWiFS Solar and Lunar Observations. *NASA Tech. Memo. 104566, Vol. 10,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 26 pp.

World Meteorological Organization, 1983: *Guide to the Meteorological Instruments and Methods of Observation,* WMO–N.8, 517 pp.

Wright, S.W., S.W. Jeffrey, F.C. Mantoura, C.A. Llewellyn, T. Bjørnland, D. Repeta, and N. Welschmeyer, 1991: Improved HPLC method for the analysis of chlorophylls and carotenoids from marine phytoplankton. *Mar. Ecol. Prog. Ser.,* **77,** 183–196.

Wyatt, C.L., 1978: *Radiometric Calibration: Theory and Methods,* Academic Press, New York, 200 pp.

——, 1987: *Radiometric System Design,* Macmillan Publishing Company, New York, 315 pp.

– Y –

Yang, H., and H.R. Gordon, 1997: Remote sensing of ocean color: Assessment of water-leaving radiance bidirectional effects on atmospheric diffuse transmittance. *Appl. Opt.,* **36,** 7,887–7,897.

Yeh, E-n., M. Darzi, and L. Kumar, 1997: "SeaWiFS stray light correction algorithm." In: Yeh, E-n., R.A. Barnes, M. Darzi, L. Kumar, E.A. Early, B.C. Johnson, J.L. Mueller, and C.C. Trees, Case Studies for SeaWiFS Calibration and Validation, Part 4. *NASA Tech. Memo. 104566, Vol. 41,* S.B. Hooker, and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 24–30.

Young, A.T., 1980: Revised depolarization corrections for atmospheric extinction. *Appl. Opt.,* **19,** 3,427–3,428.

Young, D.F., P. Minnis, D.R. Doelling, G.G. Gibson, and T. Wong, 1998: Temporal interpolation methods for the clouds and Earth's Radiant Energy System (CERES) experiment. *J. Appl. Meteor.,* **37,** 572–590.

– Z –

Zaneveld, J.R., D.M. Roach, and H. Pak, 1974: The determination of the index of refraction distribution of oceanic particulates. *J. Geophys. Res.,* **79,** 4,091–4,095.

——, J.C. Kitchen, A. Bricaud, and C. Moore, 1992: Analysis of *in situ* spectral absorption meter data. *Ocean Optics XI, Proc. SPIE,* **1750,** 187–200.

——, ——, and C. Moore, 1994: The scattering error coefficient of reflective absorption measurements, *Proc. SPIE, Ocean Optics XII,* **2,258,** 44–54.

——, E. Boss, and P.A. Hwang, 2001: The influence of coherent waves on the remotely sensed reflectance. *Optics Express,* **9,** 260–266.

Zavatarelli, M., F. Raicich, D. Bregant, A. Russo, and A. Artegiani, 1998: Climatological biogeochemical characteristics of the Adriatic Sea. *J. Mar. System,* **18,** 227–263.

Zege, E.P., A.P. Ivanov, and I.L. Katsev, 1991: *Image Transfer Through a Scattering Medium.* Springer-Verlag, New York, 349 pp.

Zibordi, G., and M. Ferrari, 1995: Instrument self-shading in underwater optical measurements: Experimental data. *Appl. Opt.,* **34,** 2,750–2,754.

——, V. Barale, G.M. Ferrari, N. Hoepffner, L. Alberotanza, P. Cova, and C. Ramasco, 1995: Coastal Atmosphere and Sea Time-Series project (CoASTS): An ocean colour remote sensing calibration-validation project. *Proc. Third Thematic Conf. Remote Sens. Mar. Coastal Environ.,* Seattle, September 18–20, **2,** 96–100.

——, J.P. Doyle, and S.B. Hooker, 1999: Offshore tower shading effects on in-water optical measurements. *J. Atmos. Ocean. Technol.,* **16,** 1,767–1,779.

——, and J-F. Berthon, 2001: *In situ* relationships between *Q*-factor and seawater optical properties in a coastal region, *Limnol. Oceanogr.,* **46,** 1,130–1,140.

——, J-F. Berthon, J.P. Doyle, S. Grossi, D. van der Linde, C. Targa, and L. Alberotanza 2002a: Coastal Atmosphere and Sea Time Series (CoASTS), Part 1: A Tower-Based Long-Term Measurement Program. *NASA Tech. Memo. 2002–206892, Vol. 19,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 29 pp.

——, S.B. Hooker, J-F. Berthon, and D. D'Alimonte, 2002b: Autonomous above-water radiance measurements from an offshore platform: A field assessment experiment. *J. Atmos. Oceanic Technol.,* **19,** 808–819.

——, D. D'Alimonte, D. van der Linde, J-F. Berthon, S.B. Hooker, J.L. Mueller, G. Lazin, and S. McLean, 2002c: The Eighth SeaWiFS Intercalibration Round-Robin Experiment (SIRREX-8), September–December 2001. *NASA Tech. Memo. 2002–206892, Vol. 20,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 39 pp.

The SeaWiFS Prelaunch Technical Report Series

Vol. 1

Hooker, S.B., W.E. Esaias, G.C. Feldman, W.W. Gregg, and C.R. McClain, 1992: An Overview of SeaWiFS and Ocean Color. *NASA Tech. Memo. 104566, Vol. 1,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 24 pp., plus color plates.

Vol. 2

Gregg, W.W., 1992: Analysis of Orbit Selection for SeaWiFS: Ascending vs. Descending Node. *NASA Tech. Memo. 104566, Vol. 2,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 16 pp.

Vol. 3

McClain, C.R., W.E. Esaias, W. Barnes, B. Guenther, D. Endres, S.B. Hooker, G. Mitchell, and R. Barnes, 1992: Calibration and Validation Plan for SeaWiFS. *NASA Tech. Memo. 104566, Vol. 3,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 41 pp.

Vol. 4

McClain, C.R., E. Yeh, and G. Fu, 1992: An Analysis of GAC Sampling Algorithms: A Case Study. *NASA Tech. Memo. 104566, Vol. 4,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 22 pp., plus color plates.

Vol. 5

Mueller, J.L., and R.W. Austin, 1992: Ocean Optics Protocols for SeaWiFS Validation. *NASA Tech. Memo. 104566, Vol. 5,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 43 pp.

Vol. 6

Firestone, E.R., and S.B. Hooker, 1992: SeaWiFS Technical Report Series Cumulative Index: Volumes 1–5. *NASA Tech. Memo. 104566, Vol. 6,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 9 pp.

Vol. 7

Darzi, M., 1992: Cloud Screening for Polar Orbiting Visible and IR Satellite Sensors. *NASA Tech. Memo. 104566, Vol. 7,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 7 pp.

Vol. 8

Hooker, S.B., W.E. Esaias, and L.A. Rexrode, 1993: Proceedings of the First SeaWiFS Science Team Meeting. *NASA Tech. Memo. 104566, Vol. 8,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 61 pp.

Vol. 9

Gregg, W.W., F.C. Chen, A.L. Mezaache, J.D. Chen, J.A. Whiting, 1993: The Simulated SeaWiFS Data Set, Version 1. *NASA Tech. Memo. 104566, Vol. 9,* S.B. Hooker, E.R. Firestone, and A.W. Indest, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 17 pp.

Vol. 10

Woodward, R.H., R.A. Barnes, C.R. McClain, W.E. Esaias, W.L. Barnes, and A.T. Mecherikunnel, 1993: Modeling of the SeaWiFS Solar and Lunar Observations. *NASA Tech. Memo. 104566, Vol. 10,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 26 pp.

Vol. 11

Patt, F.S., C.M. Hoisington, W.W. Gregg, and P.L. Coronado, 1993: Analysis of Selected Orbit Propagation Models for the SeaWiFS Mission. *NASA Tech. Memo. 104566, Vol. 11,* S.B. Hooker, E.R. Firestone, and A.W. Indest, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 16 pp.

Vol. 12

Firestone, E.R., and S.B. Hooker, 1993: SeaWiFS Technical Report Series Cumulative Index: Volumes 1–11. *NASA Tech. Memo. 104566, Vol. 12,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 28 pp.

Vol. 13

McClain, C.R., K.R. Arrigo, J. Comiso, R. Fraser, M. Darzi, J.K. Firestone, B. Schieber, E-n. Yeh, and C.W. Sullivan, 1994: Case Studies for SeaWiFS Calibration and Validation, Part 1. *NASA Tech. Memo. 104566, Vol. 13,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 52 pp., plus color plates.

Vol. 14

Mueller, J.L., 1993: The First SeaWiFS Intercalibration Round-Robin Experiment, SIRREX-1, July 1992. *NASA Tech. Memo. 104566, Vol. 14,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 60 pp.

Vol. 15

Gregg, W.W., F.S. Patt, and R.H. Woodward, 1994: The Simulated SeaWiFS Data Set, Version 2. *NASA Tech. Memo. 104566, Vol. 15,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 42 pp., plus color plates.

Vol. 16

Mueller, J.L., B.C. Johnson, C.L. Cromer, J.W. Cooper, J.T. McLean, S.B. Hooker, and T.L. Westphal, 1994: The Second SeaWiFS Intercalibration Round-Robin Experiment, SIRREX-2, June 1993. *NASA Tech. Memo. 104566, Vol. 16,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 121 pp.

Vol. 17

Abbott, M.R., O.B. Brown, H.R. Gordon, K.L. Carder, R.E. Evans, F.E. Müller-Karger, and W.E. Esaias, 1994: Ocean Color in the 21st Century: A Strategy for a 20-Year Time Series. *NASA Tech. Memo. 104566, Vol. 17,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 20 pp.

Vol. 18

Firestone, E.R., and S.B. Hooker, 1995: SeaWiFS Technical Report Series Cumulative Index: Volumes 1–17. *NASA Tech. Memo. 104566, Vol. 18,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 47 pp.

Vol. 19

McClain, C.R., R.S. Fraser, J.T. McLean, M. Darzi, J.K. Firestone, F.S. Patt, B.D. Schieber, R.H. Woodward, E-n. Yeh, S. Mattoo, S.F. Biggar, P.N. Slater, K.J. Thome, A.W. Holmes, R.A. Barnes, and K.J. Voss, 1994: Case Studies for SeaWiFS Calibration and Validation, Part 2. *NASA Tech. Memo. 104566, Vol. 19,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 73 pp.

Vol. 20

Hooker, S.B., C.R. McClain, J.K. Firestone, T.L. Westphal, E-n. Yeh, and Y. Ge, 1994: The SeaWiFS Bio-Optical Archive and Storage System (SeaBASS), Part 1. *NASA Tech. Memo. 104566, Vol. 20,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 40 pp.

Vol. 21

Acker, J.G., 1994: The Heritage of SeaWiFS: A Retrospective on the CZCS NIMBUS Experiment Team (NET) Program. *NASA Tech. Memo. 104566, Vol. 21,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 43 pp.

Vol. 22

Barnes, R.A., W.L. Barnes, W.E. Esaias, and C.R. McClain, 1994: Prelaunch Acceptance Report for the SeaWiFS Radiometer. *NASA Tech. Memo. 104566, Vol. 22,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 32 pp.

Vol. 23

Barnes, R.A., A.W. Holmes, W.L. Barnes, W.E. Esaias, C.R. McClain, and T. Svitek, 1994: SeaWiFS Prelaunch Radiometric Calibration and Spectral Characterization. *NASA Tech. Memo. 104566, Vol. 23,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 55 pp.

Vol. 24

Firestone, E.R., and S.B. Hooker, 1995: SeaWiFS Technical Report Series Cumulative Index: Volumes 1–23. *NASA Tech. Memo. 104566, Vol. 24,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 36 pp.

Vol. 25

Mueller, J.L., and R.W. Austin, 1995: Ocean Optics Protocols for SeaWiFS Validation, Revision 1. *NASA Tech. Memo. 104566, Vol. 25,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 66 pp.

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Siegel, D.A., M.C. O'Brien, J.C. Sorensen, D.A. Konnoff, E.A. Brody, J.L. Mueller, C.O. Davis, W.J. Rhea, and S.B. Hooker, 1995: Results of the SeaWiFS Data Analysis Round-Robin (DARR-94), July 1994. *NASA Tech. Memo. 104566, Vol. 26,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 58 pp.

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Mueller, J.L., R.S. Fraser, S.F. Biggar, K.J. Thome, P.N. Slater, A.W. Holmes, R.A. Barnes, C.T. Weir, D.A. Siegel, D.W. Menzies, A.F. Michaels, and G. Podesta, 1995: Case Studies for SeaWiFS Calibration and Validation, Part 3. *NASA Tech. Memo. 104566, Vol. 27,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 46 pp.

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McClain, C.R., K.R. Arrigo, W.E. Esaias, M. Darzi, F.S. Patt, R.H. Evans, J.W. Brown, C.W. Brown, R.A. Barnes, and L. Kumar, 1995: SeaWiFS Algorithms, Part 1. *NASA Tech. Memo. 104566, Vol. 28,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 38 pp., plus color plates.

Vol. 29

Aiken, J., G.F. Moore, C.C. Trees, S.B. Hooker, and D.K. Clark, 1995: The SeaWiFS CZCS-Type Pigment Algorithm. *NASA Tech. Memo. 104566, Vol. 29,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 34 pp.

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Firestone, E.R., and S.B. Hooker, 1996: SeaWiFS Technical Report Series Cumulative Index: Volumes 1–29. *NASA Tech. Memo. 104566, Vol. 30,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 43 pp.

Vol. 31

Barnes, R.A., A.W. Holmes, and W.E. Esaias, 1995: Stray Light in the SeaWiFS Radiometer. *NASA Tech. Memo. 104566, Vol. 31,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 76 pp.

Vol. 32

Campbell, J.W., J.M. Blaisdell, and M. Darzi, 1995: Level-3 SeaWiFS Data Products: Spatial and Temporal Binning Algorithms. *NASA Tech. Memo. 104566, Vol. 32,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 73 pp., plus color plates.

Vol. 33

Moore, G.F., and S.B. Hooker, 1996: Proceedings of the First SeaWiFS Exploitation Initiative (SEI) Team Meeting. *NASA Tech. Memo. 104566, Vol. 33,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 53 pp.

Vol. 34

Mueller, J.L., B.C. Johnson, C.L. Cromer, S.B. Hooker, J.T. McLean, and S.F. Biggar, 1996: The Third SeaWiFS Intercalibration Round-Robin Experiment (SIRREX-3), 19–30 September 1994. *NASA Tech. Memo. 104566, Vol. 34,* S.B. Hooker, E.R. Firestone, and J.G. Acker, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 78 pp.

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Robins, D.B., A.J. Bale, G.F. Moore, N.W. Rees, S.B. Hooker, C.P. Gallienne, A.G. Westbrook, E. Marañón, W.H. Spooner, and S.R. Laney, 1996: AMT-1 Cruise Report and Preliminary Results. *NASA Tech. Memo. 104566, Vol. 35,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 87 pp.

Vol. 36

Firestone, E.R., and S.B. Hooker, 1996: SeaWiFS Technical Report Series Cumulative Index: Volumes 1–35. *NASA Tech. Memo. 104566, Vol. 36,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 55 pp.

Vol. 37

Johnson, B.C., S.S. Bruce, E.A. Early, J.M. Houston, T.R. O'Brian, A. Thompson, S.B. Hooker, and J.L. Mueller, 1996: The Fourth SeaWiFS Intercalibration Round-Robin Experiment (SIRREX-4), May 1995. *NASA Tech. Memo. 104566, Vol. 37,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 65 pp.

Vol. 38

McClain, C.R., M. Darzi, R.A. Barnes, R.E. Eplee, J.K. Firestone, F.S. Patt, W.D. Robinson, B.D. Schieber, R.H. Woodward, and E-n. Yeh, 1996: SeaWiFS Calibration and Validation Quality Control Procedures. *NASA Tech. Memo. 104566, Vol. 38,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 68 pp.

Vol. 39

Barnes, R.A., E-n. Yeh, and R.E. Eplee, 1996: SeaWiFS Calibration Topics, Part 1. *NASA Tech. Memo. 104566, Vol. 39,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 66 pp.

Vol. 40

Barnes, R.A., R.E. Eplee, Jr., E-n. Yeh, and W.E. Esaias, 1997: SeaWiFS Calibration Topics, Part 2. *NASA Tech. Memo. 104566, Vol. 40,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 67 pp.

Vol. 41

Yeh, E-n., R.A. Barnes, M. Darzi, L. Kumar, E.A. Early, B.C. Johnson, and J.L. Mueller, 1997: Case Studies for SeaWiFS Calibration and Validation, Part 4. *NASA Tech. Memo. 104566, Vol. 41,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 35 pp.

Vol. 42

Falkowski, P.G., M.J. Behrenfeld, W.E. Esaias, W. Balch, J.W. Campbell, R.L. Iverson, D.A. Kiefer, A. Morel, and J.A. Yoder, 1998: Satellite Primary Productivity Data and Algorithm Development: A Science Plan for Mission to Planet Earth. *NASA Tech. Memo. 1998–104566, Vol. 42,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 36 pp.

Vol. 43

Firestone, E.R., and S.B. Hooker, 1998: SeaWiFS Prelaunch Technical Report Series Final Cumulative Index. *NASA Tech. Memo. 1998–104566, Vol. 43,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 69 pp.

The SeaWiFS Postlaunch Technical Report Series

Vol. 1

Johnson, B.C., J.B. Fowler, and C.L. Cromer, 1998: The SeaWiFS Transfer Radiometer (SXR). *NASA Tech. Memo. 1998–206892, Vol. 1,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 58 pp.

Vol. 2

Aiken, J., D.G. Cummings, S.W. Gibb, N.W. Rees, R. Woodd-Walker, E.M.S. Woodward, J. Woolfenden, S.B. Hooker, J-F. Berthon, C.D. Dempsey, D.J. Suggett, P. Wood, C. Donlon, N. González-Benítez, I. Huskin, M. Quevedo, R. Barciela-Fernandez, C. de Vargas, and C. McKee, 1998: AMT-5 Cruise Report. *NASA Tech. Memo. 1998–206892, Vol. 2,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 113 pp.

Vol. 3

Hooker, S.B., G. Zibordi, G. Lazin, and S. McLean, 1999: The SeaBOARR-98 Field Campaign. *NASA Tech. Memo. 1999–206892, Vol. 3,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 40 pp.

Vol. 4

Johnson, B.C., E.A. Early, R.E. Eplee, Jr., R.A. Barnes, and R.T. Caffrey, 1999: The 1997 Prelaunch Radiometric Calibration of SeaWiFS. *NASA Tech. Memo. 1999–206892, Vol. 4,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 51 pp.

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Barnes, R.A., R.E. Eplee, Jr., S.F. Biggar, K.J. Thome, E.F. Zalewski, P.N. Slater, and A.W. Holmes 1999: The SeaWiFS Solar Radiation-Based Calibration and the Transfer-to-Orbit Experiment. *NASA Tech. Memo. 1999–206892, Vol. 5,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, 28 pp.

Vol. 6

Firestone, E.R., and S.B. Hooker, 2000: SeaWiFS Postlaunch Technical Report Series Cumulative Index: Volumes 1–5. *NASA Tech. Memo. 2000–206892, Vol. 6,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 14 pp.

Vol. 7

Johnson, B.C., H.W. Yoon, S.S. Bruce, P-S. Shaw, A. Thompson, S.B. Hooker, R.E. Eplee, Jr., R.A. Barnes, S. Maritorena, and J.L. Mueller, 1999: The Fifth SeaWiFS Intercalibration Round-Robin Experiment (SIRREX-5), July 1996. *NASA Tech. Memo. 1999–206892, Vol. 7,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, 75 pp.

Vol. 8

Hooker, S.B., and G. Lazin, 2000: The SeaBOARR-99 Field Campaign. *NASA Tech. Memo. 2000–206892, Vol. 8,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, 46 pp.

Vol. 9

McClain, C.R., E.J. Ainsworth, R.A. Barnes, R.E. Eplee, Jr., F.S. Patt, W.D. Robinson, M. Wang, and S.W. Bailey, 2000: SeaWiFS Postlaunch Calibration and Validation Analyses, Part 1. *NASA Tech. Memo. 2000–206892, Vol. 9,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, 82 pp.

Vol. 10

McClain, C.R., R.A. Barnes, R.E. Eplee, Jr., B.A. Franz, N.C. Hsu, F.S. Patt, C.M. Pietras, W.D. Robinson, B.D. Schieber, G.M. Schmidt, M. Wang, S.W. Bailey, and P.J. Werdell, 2000: SeaWiFS Postlaunch Calibration and Validation Analyses, Part 2. *NASA Tech. Memo. 2000–206892, Vol. 10,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, 57 pp.

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O'Reilly, J.E., S. Maritorena, M.C. O'Brien, D.A. Siegel, D. Toole, D. Menzies, R.C. Smith, J.L. Mueller, B.G. Mitchell, M. Kahru, F.P. Chavez, P. Strutton, G.F. Cota, S.B. Hooker, C.R. McClain, K.L. Carder, F. Müller-Karger, L. Harding, A. Magnuson, D. Phinney, G.F. Moore, J. Aiken, K.R. Arrigo, R. Letelier, M. Culver, 2000: SeaWiFS Postlaunch Calibration and Validation Analyses, Part 3. *NASA Tech. Memo. 2000–206892, Vol. 11,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, 49 pp.

Vol. 12

Firestone, E.R., and S.B. Hooker, 2001: SeaWiFS Postlaunch Technical Report Series Cumulative Index: Volumes 1–11. *NASA Tech. Memo. 2001–206892, Vol. 12,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 24 pp.

Vol. 13

Hooker, S.B., G. Zibordi, J-F. Berthon, S.W. Bailey, and C.M. Pietras, 2000: The SeaWiFS Photometer Revision for Incident Surface Measurement (SeaPRISM) Field Commissioning. *NASA Tech. Memo. 2000–206892, Vol. 13,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 24 pp.

Vol. 14

Hooker, S.B., H. Claustre, J. Ras, L. Van Heukelem, J-F. Berthon, C. Targa, D. van der Linde, R. Barlow, and H. Sessions, 2000: The First SeaWiFS HPLC Analysis Round-Robin Experiment (SeaHARRE-1). *NASA Tech. Memo. 2000–206892, Vol. 14,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 42 pp.

Vol. 15

Hooker, S.B., G. Zibordi, J-F. Berthon, D. D'Alimonte, S. Maritorena, S. McLean, and J. Sildam, 2001: Results of the Second SeaWiFS Data Analysis Round Robin, March 2000 (DARR-00). *NASA Tech. Memo. 2001–206892, Vol. 15,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 71 pp.

Vol. 16

Patt, F.S., 2002: Navigation Algorithms for the SeaWiFS Mission. *NASA Tech. Memo. 2002–206892, Vol. 16,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 17 pp.

Vol. 17

Hooker, S.B., S. McLean, J. Sherman, M. Small, G. Lazin, G. Zibordi, and J.W. Brown, 2002: The Seventh SeaWiFS Intercalibration Round-Robin Experiment (SIRREX-7), March 1999. *NASA Tech. Memo. 2002–206892, Vol. 17,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 69 pp.

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Firestone, E.R., and S.B. Hooker, 2003: SeaWiFS Postlaunch Technical Report Series Cumulative Index: Volumes 1–17. *NASA Tech. Memo. 2003–206892, Vol. 18,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 28 pp.

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Zibordi, G., J-F. Berthon, J.P. Doyle, S. Grossi, D. van der Linde, C. Targa, and L. Alberotanza 2002: Coastal Atmosphere and Sea Time Series (CoASTS), Part 1: A Tower-Based Long-Term Measurement Program. *NASA Tech. Memo. 2002–206892, Vol. 19,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 29 pp.

Vol. 20

Berthon, J-F., G. Zibordi, J.P. Doyle, S. Grossi, D. van der Linde, and C. Targa, 2002: Coastal Atmosphere and Sea Time Series (CoASTS), Part 2: Data Analysis. *NASA Tech. Memo. 2002–206892, Vol. 20,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 25 pp.

Vol. 21

Zibordi, G., D. D'Alimonte, D. van der Linde, J-F. Berthon, S.B. Hooker, J.L. Mueller, G. Lazin, and S. McLean, 2002: The Eighth SeaWiFS Intercalibration Round-Robin Experiment (SIRREX-8), September–December 2001. *NASA Tech. Memo. 2002–206892, Vol. 21,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 39 pp.

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Firestone, E.R., and S.B. Hooker, 2003: SeaWiFS Postlaunch Technical Report Series Cumulative Index: Volumes 1–23. *NASA Tech. Memo. 2003–206892, Vol. 24,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 35 pp.

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Doyle, J.P., S.B. Hooker, G. Zibordi, and D. van der Linde, 2003: Validation of an In-Water, Tower-Shading Correction Scheme. *NASA Tech. Memo. 2003–206892, Vol. 25,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 32 pp.

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Zibordi, G., D. D'Alimonte, D. van der Linde, S.B. Hooker, and J.W. Brown, 2003: New Laboratory Methods for Characterizing the Immersion Factors of Irradiance Sensors. *NASA Tech. Memo. 2003–206892, Vol. 26,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 34 pp.

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Bilanow, S., and F.S. Patt, 2004: Pointing Performance for the SeaWiFS Mission. *NASA Tech. Memo. 2004–206892, Vol. 28,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 65 pp.

Vol. 29

Firestone, E.R., and S.B. Hooker, 2004: SeaWiFS Postlaunch Technical Report Series Final Cumulative Index. *NASA Tech. Memo. 2004–206892, Vol. 29,* S.B. Hooker and E.R. Firestone, Eds., NASA Goddard Space Flight Center, Greenbelt, Maryland, 44 pp.

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13. ABSTRACT *(Maximum 200 words)*

The Sea-viewing Wide Field-of-view Sensor (SeaWiFS) is the follow-on ocean color instrument to the Coastal Zone Color Scanner (CZCS), which ceased operations in 1986, after an eight-year mission. SeaWiFS was launched on 1 August 1997, onboard the OrbView-2 satellite, built by Orbital Sciences Corporation (OSC). The SeaWiFS Project at the National Aeronautics and Space Administration (NASA) Goddard Space Flight Center (GSFC), undertook the responsibility of documenting all aspects of this mission, which is critical to the ocean color and marine science communities. The start of this documentation was titled the *SeaWiFS Technical Report Series*, which ended after 43 volumes were published. A follow-on series was started, titled the *SeaWiFS Postlaunch Technical Report Series*. This particular volume of the so-called *Postlaunch Series* serves as a reference, or guidebook, to the previous 28 volumes, i.e., the entire Postlaunch Series, and consists of 4 sections including an errata, an index to key words and phrases, a list of acronyms used, and a list of all references cited. The editors published a cumulative index of this type after every five volumes.

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