

# Optics - down/upwelling radiance using MER 2040 from RVIB Nathaniel B. Palmer NBP-97-8 cruise in the Southern Ocean in 1997 (U.S. JGOFS AESOPS project)

Website: <https://www.bco-dmo.org/dataset/2759>

Version: December 16, 2002

Version Date: 2002-12-16

## Project

» [U.S. JGOFS Antarctic Environment and Southern Ocean Process Study](#) (AESOPS)

## Program

» [U.S. Joint Global Ocean Flux Study](#) (U.S. JGOFS)

Contributors	Affiliation	Role
<a href="#">Mitchell, B. Gregory</a>	University of California-San Diego (UCSD-SIO)	Principal Investigator
<a href="#">Stramski, Dariusz</a>	University of California-San Diego (UCSD-SIO)	Co-Principal Investigator
<a href="#">Chandler, Cynthia L.</a>	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

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## Dataset Description

Optics - down/upwelling radiance using MER 2040

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## Data Files

File
<b>optics_irrad.csv</b> (Comma Separated Values (.csv), 2.21 MB) MD5:dfee901bfa2c6465afc9b48952c08be4
Primary data file for dataset ID 2759

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## Parameters

Parameter	Description	Units
cruise_id	cruise designation	
event	event number from event log	
depth_n	nominal depth	meters
Ed_xxx	in water downwelling irradiance at xxx nm wavelength	W m <sup>-2</sup> nm <sup>-1</sup>
Es_xxx	surface downwelling irradiance at xxx nm wavelength	W m <sup>-2</sup> nm <sup>-1</sup>
Lu_xxx	in water upwelling radiance at xxx nm wavelength	W m <sup>-2</sup> sr <sup>-1</sup> nm <sup>-1</sup>

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## Instruments

<b>Dataset-specific Instrument Name</b>	Spectroradiometer
<b>Generic Instrument Name</b>	Spectroradiometer
<b>Dataset-specific Description</b>	MER2040 radiometer used to measure downwelling irradiance, upwelling radiance.
<b>Generic Instrument Description</b>	A Spectroradiometer or Spectraradiometer is an instrument that measures the intensity and nature of electromagnetic radiation. An ocean color radiometer makes the measurements in a manner optimized for the determination of ocean chlorophyll concentration.

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## Deployments

### NBP-97-08

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57722">https://www.bco-dmo.org/deployment/57722</a>
<b>Platform</b>	RVIB Nathaniel B. Palmer
<b>Report</b>	<a href="http://usjgofs.whoi.edu/aesops/p4.html">http://usjgofs.whoi.edu/aesops/p4.html</a>
<b>Start Date</b>	1997-11-05
<b>End Date</b>	1997-12-13
<b>Description</b>	<p>Ross Sea Process Study 4 SeaWiFS transmits images to U.S. JGOFS scientists aboard the Palmer, for first time on November 23, 1997.</p> <p><b>Methods &amp; Sampling</b>            PI: Greg Mitchell of: Scripps Institution of Oceanography dataset: Optics - downwelling irradiance, upwelling radiance using MER 2040 dates: November 09, 1997 to December 11, 1997 location: N: -60.1623 S: -76.6332 W: 168.7350 E: -169.9500 project/cruise: AESOPS/NBP97-8 - Process 4 cruise ship: R/V Nathaniel B. Palmer Methodology</p>

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## Project Information

## **U.S. JGOFS Antarctic Environment and Southern Ocean Process Study (AESOPS)**

**Website:** <http://usjgofs.whoi.edu/research/aesops.html>

**Coverage:** Southern Ocean, Ross Sea

The U.S. Southern Ocean JGOFS program, called Antarctic Environment and Southern Ocean Process Study (AESOPS), began in August 1996 and continued through March 1998. The U.S. JGOFS AESOPS program focused on two regions in the Southern Ocean: an east/west section of the Ross-Sea continental shelf along 76.5°S, and a second north/south section of the Southern Ocean spanning the Antarctic Circumpolar Current (ACC) at ~170°W (identified as the Polar Front). The science program, coordinated by Antarctic Support Associates (ASA), comprised eleven cruises using the R.V.I.B Nathaniel B. Palmer and R/V Roger Revelle as observational platforms and for deployment and recovery of instrumented moorings and sediment-trap arrays. The Ross-Sea region was occupied on six occasions and the Polar Front five times. Mapping data were obtained from SeaSoar, ADCP, and bathymetric systems. Satellite coverage was provided by the NASA SeaWiFS and the NOAA/NASA Pathfinder programs.

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## **Program Information**

### **U.S. Joint Global Ocean Flux Study (U.S. JGOFS)**

**Website:** <http://usjgofs.whoi.edu/>

**Coverage:** Global

The United States Joint Global Ocean Flux Study was a national component of international JGOFS and an integral part of global climate change research.

The U.S. launched the Joint Global Ocean Flux Study (JGOFS) in the late 1980s to study the ocean carbon cycle. An ambitious goal was set to understand the controls on the concentrations and fluxes of carbon and associated nutrients in the ocean. A new field of ocean biogeochemistry emerged with an emphasis on quality measurements of carbon system parameters and interdisciplinary field studies of the biological, chemical and physical process which control the ocean carbon cycle. As we studied ocean biogeochemistry, we learned that our simple views of carbon uptake and transport were severely limited, and a new "wave" of ocean science was born. U.S. JGOFS has been supported primarily by the U.S. National Science Foundation in collaboration with the National Oceanic and Atmospheric Administration, the National Aeronautics and Space Administration, the Department of Energy and the Office of Naval Research. U.S. JGOFS, ended in 2005 with the conclusion of the Synthesis and Modeling Project (SMP).

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