

Integrated daily incident PAR from R/V Endeavor, R/V Atlantis II cruises EN198, AII-119-4, AII-119-5 in the North Atlantic in 1989 (U.S. JGOFS NABE project)

Website: <https://www.bco-dmo.org/dataset/2571>

Version: December 4, 1995

Version Date: 1995-12-04

Project

» [U.S. JGOFS North Atlantic Bloom Experiment](#) (NABE)

Program

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

Contributors	Affiliation	Role
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Dataset Description

Integrated daily incident PAR (400-700 nm)

Methods & Sampling

PI: William Broenkow
of: Moss Landing Marine Laboratories
dataset: MLML - Integrated daily incident PAR (400-700 nm)
dates: April 25, 1989 to June 7, 1989
location: N: 60.7483 S: 41.066 W: -26.0615 E: -17.67
project/cruise: North Atlantic Bloom Experiment cruises
ship: Atlantis II

Note: "Clear sky irradiance" (Frouin et al 1989, JGR)
is given at nominal stations
(47N 21W and 59.5N 21W) for ozone 0.3, water 2.5.
PAR irradiance was measured by LiCor Type LI-190SA cosine sensor.
Scalar (spherical) PAR was measured by LiCor type LI-193-SB
for MLML incubator.

Ref: JGOFS North Atlantic Bloom long track and vertical profiling results.
W.W. Broenkow, R.E. Reaves and M.A. Yarbrough MLML Tech Pub 90-1
Recorded: 14:16:19 16-FEB-90

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Parameters

Parameter	Description	Units
lat	latitude nearest to noon each day from event log, minus = south	decimal degrees
lon	longitude nearest to noon each day from event log, minus = west	decimal degrees
date	Date of Daily Integrated Irradiances	YYYYMMDD
day_ser	Serial day beginning Jan. 1, 1900	
par_int	Integrated Incident PAR 400-700nm	moles/m ²
par_peak	Peak PAR 400-700nm Incident Irradiance	umole/sec/m ²
time_int	Total integrated time	hours
par_int_s	Integrated Spherical PAR 400-700nm	moles/m ²
par_peak_s	Peak Spherical PAR 400-700nm Irradiance	umole/sec/m ²
time_2_int	Total Time integrated	hours
par_daily	Daily Clear Sky PAR 400-700nm Irradiance	moles/m ²

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Instruments

Dataset-specific Instrument Name	LiCor Underwater Spectrial Quantum Sensor
Generic Instrument Name	LI-COR LI-193 PAR Sensor
Generic Instrument Description	The LI-193 Underwater Spherical Quantum Sensor uses a Silicon Photodiode and glass filters encased in a waterproof housing to measure PAR (in the 400 to 700 nm waveband) in aquatic environments. Typical output is in micromol s ⁻¹ m ⁻² . The LI-193 Sensor gives an added dimension to underwater PAR measurements as it measures photon flux from all directions. This measurement is referred to as Photosynthetic Photon Flux Fluence Rate (PPFFR) or Quantum Scalar Irradiance. This is important, for example, when studying phytoplankton, which utilize radiation from all directions for photosynthesis. LI-COR began producing Spherical Quantum Sensors in 1979; serial numbers for the LI-193 begin with SPQA-XXXXX (licor.com).

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Deployments

EN198

Website	https://www.bco-dmo.org/deployment/57739
Platform	R/V Endeavor
Start Date	1989-06-28
End Date	1989-07-07
Description	post bloom cruise; 7 locations; 63°N 25°W to 59°N 14°W Methods & Sampling dates: June 28, 1989 to July 7, 1989 location: N: 62.9483 S: 59.2933 W: -24.2033 E: -14.9667 project/cruise: North Atlantic Bloom Experiment/Endeavor 198 ships: Endeavor

All-119-5

Website	https://www.bco-dmo.org/deployment/57738
Platform	R/V Atlantis II
Start Date	1989-05-15
End Date	1989-06-06
Description	late bloom cruise; 31 locations; 61N 22W to 41N 17W Methods & Sampling project/cruise: North Atlantic Bloom Experiment/Atlantis II 119, leg 5 ship: Atlantis II

All-119-4

Website	https://www.bco-dmo.org/deployment/57737
Platform	R/V Atlantis II
Start Date	1989-04-17
End Date	1989-05-11
Description	early bloom cruise; 17 locations; 60N 21W to 46N 18W Methods & Sampling project/cruise: North Atlantic Bloom Experiment/Atlantis II 119, leg 4 ship: Atlantis II

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Project Information

U.S. JGOFS North Atlantic Bloom Experiment (NABE)

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

Coverage: North Atlantic

One of the first major activities of JGOFS was a multinational pilot project, North Atlantic Bloom Experiment (NABE), carried out along longitude 20° West in 1989 through 1991. The United States participated in 1989 only, with the April deployment of two sediment trap arrays at 48° and 34° North. Three process-oriented cruises were conducted, April through July 1989, from R/V *Atlantis II* and R/V *Endeavor* focusing on sites at 46° and 59° North. Coordination of the NABE process-study cruises was supported by NSF-OCE award # 8814229. Ancillary sea surface mapping and AXBT profiling data were collected from NASA's P3 aircraft for a series of one day flights, April through June 1989.

A detailed description of NABE and the initial synthesis of the complete program data collection efforts appear in: Topical Studies in Oceanography, JGOFS: The North Atlantic Bloom Experiment (1993), Deep-Sea Research II, Volume 40 No. 1/2.

The U.S. JGOFS Data management office compiled a preliminary NABE data report of U.S. activities: Slagle, R. and G. Heimerdinger, 1991. U.S. Joint Global Ocean Flux Study, North Atlantic Bloom Experiment, Process Study Data Report P-1, April-July 1989. NODC/U.S. JGOFS Data Management Office, Woods Hole Oceanographic Institution, 315 pp. (out of print).

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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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Funding

Funding Source	Award
National Science Foundation (NSF)	unknown NABE NSF

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