

# Meteorology and SST 1 minute data from non-US GLOBEC cruises from eleven R/V Oceanus and R/V Endeavor cruises in the North Atlantic, SE of New England, Gulf of Maine and Georges Bank from 1996-1998 (GB project)

**Website:** <https://www.bco-dmo.org/dataset/3496>

**Version:** final

**Version Date:** 2011-06-30

## Project

» [U.S. GLOBEC Georges Bank](#) (GB)

## Program

» [U.S. GLOBal ocean ECosystems dynamics](#) (U.S. GLOBEC)

Contributors	Affiliation	Role
<a href="#">Payne, Richard</a>	Woods Hole Oceanographic Institution (WHOI)	Principal Investigator
<a href="#">Groman, Robert C.</a>	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

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## Dataset Description

### Continuous along track meteorology and sea surface data, 1 minute values, 1997

#### Processed by:

Richard Payne  
Woods Hole Oceanographic Institution  
Woods Hole, MA 20543  
[rpayne@whoi.edu](mailto:rpayne@whoi.edu)

Additional [data processing notes](#) are available.

The sea surface temperature as measured by the hull sensor is not shown since the sea surface temperature as measured via the engine inlet (field name is temp\_ss1) is more accurate.

#### Processing Notes

1. Concatenate daily 1 minute files into one file for whole cruise
2. Edit file for obvious bad data, i.e., missing data, garbage characters, etc.
3. Run program which reformats data. Output parameters:  
Year day, lat, long, Speed made good, course made good, gyro 1 & 2, Edo speed, Edo indicator, port wind speed, starboard ws, port wind azimuth, starboard waz, air temp, relative humidity, barometric pressure, sea surface temp @5m & 1m depth, Edo depth, Chirp sonar depth.
4. Put plots of all parameters on screen and look for obvious single bad points. Edit in basic concatenated file. Except I have not edited depths.
5. Iterate steps 2-4 until no more obvious bad points.

6. Run second program which computes true wind speed and direction from speed and course made good, gyros, larger of port or starboard ws and accompanying wind azimuth. Outputs are year day, lat lon, speed and course made good, gyro, relative ws and direction, true ws and direction, air temp, relative humidity, barometric pressure, short- and long-wave radiation, 5m and 1m sea surface temps, Edo depth, Chirp sonar depth, Edo speed, Edo indicator.
7. Check plots of true wind speed and direction to make sure they look ok.
8. Run vector averaging program which produces 60 minute series. The program uses 60 consecutive records and does not check for missing records. I have not carried depths since hourly averages do not seem useful nor Edo speeds since they seem pretty generally useless. Output parameters are: Year day, lat, long, true wind speed and direction, air temp, relative humidity, barometric pressure, short- and long-wave radiation, sea surface temp @ 5m & 1m.

Specific notes:

The data quality is generally pretty poor on the Oceanus cruises. OC297 and OC298 have no SOG, COG, or gyro so I could not correct the winds. I almost set the TWS, TWD to 0 but decided to leave them in as RWS, RWD. One could get a semiquantitative feel for the winds. OC301 had gyro but no SOG, COG so I computed them from the GPS position differences. It came out better than I expected. Warn users to be skeptical about the Oceanus data.

*From: Richard E. Payne / 11 Apr 1997 09:05:25 -0400  
 Updated: April 28, 2004; G.Heimerdinger*

updated: June 27, 2011; MDA

## Methods & Sampling

The sea surface temperature as measured by the hull sensor is not shown since the sea surface temperature as measured via the engine inlet (field name is temp\_ss1) is more accurate.

## Data Processing Description

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## Data Files

File
<b>emet_W1_other.csv</b> (Comma Separated Values (.csv), 27.56 MB) <small>MD5:57f44a45dac0bc161bd8c524e0fd9919</small>
Primary data file for dataset ID 3496

## Parameters

Parameter	Description	Units
cruiseid	cruise identifier	
year	year, GMT e.g. 1997.	
si	scientific investigator responsible for this cruise	
month_gmt	month of year, GMT e.g. 6 is June	
day_gmt	day of month, GMT	
time_gmt	time of day, GMT, 24 hour clock	hoursandminutes
lat	latitude, south is negative	decimaldegrees
lon	longitude, west is negative	decimaldegrees
depth_w	water depth	meters
depth_cs	Chirp Sonar water depth	meters
wind_speed_c	wind speed corrected for ship's motion	meters/second
wind_dir_c	wind direction, meteorologic convention, corrected for ship's motion	degrees
wind_speed_r	wind speed, relative to ship	meters/second
wind_dir_r	wind direction, relative to ship, meteorologic convention	degrees
temp_air	air temperature	degreesC
humidity	relative humidity	percent
press_bar	barometric pressure	millibars

precip_level	level in the precipitation gauge, total precipitation between two times is the difference in levels (+50 cm if the gauge self-siphoned)	centimeters
ed_sw	short wave downward irradiance	watts/meter <sup>2</sup> /second
ed_lw	long wave downward irradiance	watts/meter <sup>2</sup> /second
temp_ss1	sea surface temperature 1 meter below the surface	degreesC
temp_ss3	sea surface temperature 3 meters below the surface	degreesC
temp_ss5	sea surface temperature 5 meters below the surface	degreesC
cond_mM	sea surface conductivity	mmho/centimeter
sal_ss3	sea surface salinity, nominally measured at 3 meters	PSU
speed_trim	trimble GPS speed made good	meters/second
course	ship's course	degrees
course_trim	trimble GPS course made good	degrees
yrday_gmt	Julian day, GMT e.g. 29.5 is January 29 at 1200 hours	decimalday
numb_records	number of records used to compute this value	

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## Deployments

**OC297**

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57647">https://www.bco-dmo.org/deployment/57647</a>
<b>Platform</b>	R/V Oceanus
<b>Start Date</b>	1997-01-26
<b>End Date</b>	1997-02-07
<b>Description</b>	<p><b>Methods &amp; Sampling</b> The sea surface temperature as measured by the hull sensor is not shown since the sea surface temperature as measured via the engine inlet (field name is temp_ss1) is more accurate.</p> <p><b>Processing Description</b> Concatenate daily 1 minute files into one file for whole cruise Edit file for obvious bad data, i.e., missing data, garbage characters, etc. Run program which reformats data. Output parameters: Year day, lat, long, Speed made good, course made good, gyro 1 &amp; 2, Edo speed, Edo indicator, port wind speed, starboard ws, port wind azimuth, starboard waz, air temp, relative humidity, barometric pressure, sea surface temp @5m &amp; 1m depth, Edo depth, Chirp sonar depth. Put plots of all parameters on screen and look for obvious single bad points. Edit in basic concatenated file. Except I have not edited depths. Iterate steps 2-4 until no more obvious bad points. Run second program which computes true wind speed and direction from speed and course made good, gyros, larger of port or starboard ws and accompanying wind azimuth. Outputs are year day, lat lon, speed and course made good, gyro, relative ws and direction, true ws and direction, air temp, relative humidity, barometric pressure, short- and long-wave radiation, 5m and 1m sea surface temps, Edo depth, Chirp sonar depth, Edo speed, Edo indicator. Check plots of true wind speed and direction to make sure they look ok. Run vector averaging program which produces 60 minute series. The program uses 60 consecutive records and does not check for missing records. I have not carried depths since hourly averages do not seem useful nor Edo speeds since they seem pretty generally useless. Output parameters are: Year day, lat, long, true wind speed and direction, air temp, relative humidity, barometric pressure, short- and long-wave radiation, sea surface temp @ 5m &amp; 1m. Edo depth error correction: replace bad value with previous value. Cruise Exp Spds Dirs AT RH BP SST SSC SWR Prec OC297 GLOBEC Uncor Uncor NoisyBad Good Noisy Good Good Bad</p>

### EN283

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57652">https://www.bco-dmo.org/deployment/57652</a>
<b>Platform</b>	R/V Endeavor

### EN286

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57651">https://www.bco-dmo.org/deployment/57651</a>
<b>Platform</b>	R/V Endeavor
<b>Description</b>	<p><b>Processing Description</b> Edo depth error correction: replace bad value with previous value. EN286 - Processed with ENMET286. RH very noisy. Edo depth had few values so I filled in with Chirp Sonar. Poor quality in combination. 30335 data records, 690 interpolated. Cruise Exp Spds Dirs AT RH BP SST SSC SWR Prec EN286 GLOBEC --- --- --- --- --- --- --- --- ---</p>

### EN287

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57650">https://www.bco-dmo.org/deployment/57650</a>
<b>Platform</b>	R/V Endeavor
<b>Description</b>	<b>Processing Description</b> Edo depth error correction: replace bad value with previous value. EN287 - Clean except for noisy Edo depth. 26,990 data records, 22 interpolated Cruise Exp Spds Dirs AT RH BP SST SSC SWR Prec EN287 GLOBEC --- --- --- --- --- --- --- --- --- ---

### EN293

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57649">https://www.bco-dmo.org/deployment/57649</a>
<b>Platform</b>	R/V Endeavor
<b>Description</b>	<b>Processing Description</b> Edo depth error correction: replace bad value with previous value. EN293 - Very clean. No Edo depth. 8052 records, no interpolated. Cruise Exp Spds Dirs AT RH BP SST SSC SWR Prec EN293 GLOBEC --- --- --- --- --- --- --- --- --- ---

### EN295

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57648">https://www.bco-dmo.org/deployment/57648</a>
<b>Platform</b>	R/V Endeavor
<b>Description</b>	<b>Processing Description</b> Edo depth error correction: replace bad value with previous value. EN295 - Very clean. Little useful Edo depth. Blocks of both GPS data missing, but not simultaneously. 37,455 records, 4 interpolated. 6/9/98 - Wrote MET1MIN.FOR to interpolate EN295W.DAT to a 1 minute series on the minute for Beardsley. Output is EN295W1.DAT. Cruise Exp Spds Dirs AT RH BP SST SSC SWR Prec EN295 GLOBEC --- --- --- --- --- --- --- --- --- ---

### EN311

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57646">https://www.bco-dmo.org/deployment/57646</a>
<b>Platform</b>	R/V Endeavor
<b>Description</b>	<b>Processing Description</b> Edo depth error correction: replace bad value with previous value. EN311 - Good data but no Edo depths. Much Magellan data missing. 7/17/98 - Corrected year day. Cruise Exp Spds Dirs AT RH BP SST SSC SWR Prec EN311 GLOBEC --- --- --- --- --- --- --- --- --- ---

### OC314

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57653">https://www.bco-dmo.org/deployment/57653</a>
<b>Platform</b>	R/V Oceanus
<b>Description</b>	<b>Processing Description</b> Edo depth error correction: replace bad value with previous value. Cruise Exp Spds Dirs AT RH BP SST SSC SWR Prec OC314 GLOBEC Good Fair Good Good Good BadSpt Good None BadSpt

### OC315

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57654">https://www.bco-dmo.org/deployment/57654</a>
<b>Platform</b>	R/V Oceanus
<b>Report</b>	<a href="http://www.smast.umassd.edu/OCEANOL/reports/CONVEX/OC315/oc315_report.html">http://www.smast.umassd.edu/OCEANOL/reports/CONVEX/OC315/oc315_report.html</a>
<b>Start Date</b>	1998-01-09
<b>End Date</b>	1998-01-12
<b>Description</b>	Not a GLOBEC Georges Bank cruise, but of interest to the GLOBEC community.  <b>Processing Description</b> Edo depth error correction: replace bad value with previous value. OC315 - No gyro, set gyro = course made good from GPS Cruise Exp Spds Dirs AT RH BP SST SWR Prec SSC SSAL OC315 GLOBEC Good/no gyroGood Good Good Good Good None Poor None

### OC316

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57655">https://www.bco-dmo.org/deployment/57655</a>
<b>Platform</b>	R/V Oceanus
<b>Report</b>	<a href="http://www.smast.umassd.edu/OCEANOL/reports/CONVEX/OC316/oc316_report.html">http://www.smast.umassd.edu/OCEANOL/reports/CONVEX/OC316/oc316_report.html</a>
<b>Start Date</b>	1998-01-29
<b>End Date</b>	1998-02-02
<b>Description</b>	Not a GLOBEC Georges Bank cruise, but of interest to the GLOBEC community.  <b>Processing Description</b> Edo depth error correction: replace bad value with previous value. Cruise Exp Spds Dirs AT RH BP SST SWR Prec SSC SSAL OC316 GLOBEC Good Good Good Good Good Good Good Zero Noisy None

### OC323

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57656">https://www.bco-dmo.org/deployment/57656</a>
<b>Platform</b>	R/V Oceanus
<b>Description</b>	<b>Processing Description</b> Edo depth error correction: replace bad value with previous value. Cruise Exp Spds Dirs AT RH BP SST SWR Prec SSC SSAL OC323 GLOBEC Good Good Good Good Good Good Good Bad Noisy Good

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## Project Information

### U.S. GLOBEC Georges Bank (GB)

**Website:** [http://globec.whoi.edu/globec\\_program.html](http://globec.whoi.edu/globec_program.html)

**Coverage:** Georges Bank, Gulf of Maine, Northwest Atlantic Ocean

The U.S. GLOBEC [Georges Bank](#) Program is a large multi-disciplinary multi-year oceanographic effort. The proximate goal is to understand the population dynamics of key species on the Bank - Cod, [Haddock](#), and two species of zooplankton ([Calanus finmarchicus](#) and [Pseudocalanus](#)) - in terms of their coupling to the physical environment and in terms of their [predators and prey](#). The ultimate goal is to be able to predict changes in the

distribution and abundance of these species as a result of changes in their physical and biotic environment as well as to anticipate how their populations might respond to climate change.

The effort is substantial, requiring broad-scale surveys of the entire Bank, and process studies which focus both on the links between the target species and their physical environment, and the determination of fundamental aspects of these species' life history (birth rates, growth rates, death rates, etc).

Equally important are the modelling efforts that are ongoing which seek to provide realistic predictions of the flow field and which utilize the life history information to produce an integrated view of the dynamics of the populations.

The U.S. GLOBEC Georges Bank [Executive Committee \(EXCO\)](#) provides program leadership and effective communication with the funding agencies.

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## **Program Information**

### **U.S. GLOBAL ocean ECosystems dynamics (U.S. GLOBEC)**

**Website:** <http://www.usglobec.org/>

**Coverage:** Global

U.S. GLOBEC (GLOBAL ocean ECosystems dynamics) is a research program organized by oceanographers and fisheries scientists to address the question of how global climate change may affect the abundance and production of animals in the sea.

The U.S. GLOBEC Program currently had major research efforts underway in the Georges Bank / Northwest Atlantic Region, and the Northeast Pacific (with components in the California Current and in the Coastal Gulf of Alaska). U.S. GLOBEC was a major contributor to International GLOBEC efforts in the Southern Ocean and Western Antarctic Peninsula (WAP).

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