# Meteorology and sea surface temperature (MET) 15 minute averaged data from six R/V Endeavor and R/V Oceanus cruises in the Gulf of Maine and Georges Bank area during 1996 (GB project)

**Website**: https://www.bco-dmo.org/dataset/2310
**Data Type**: Cruise Results
**Version**: 1
**Version Date**: 2004-04-29

**Project**
» U.S. GLOBEC Georges Bank (GB)

**Program**
» U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)

| Contributors | Affiliation | Role |
|---|---|---|
| Payne, Richard | Woods Hole Oceanographic Institution (WHOI) | Principal Investigator |
| Groman, Robert C. | Woods Hole Oceanographic Institution (WHOI BCO-DMO) | BCO-DMO Data Manager |

**Abstract**
Meteorology and sea surface temperature (MET) 15 minute averaged data from six R/V Endeavor and R/V Oceanus cruises in the Gulf of Maine and Georges Bank area during 1996.

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## Coverage

**Spatial Extent**: **N**:43.6559 **E**:-65.6202 **S**:39.6076 **W**:-71.4193
**Temporal Extent**: 1996-01-10 - 1996-12-20

## Dataset Description

# Continuous along track meteorology and sea surface data, 15 minute averaged values, 1996

**Processed by:**

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Additional [data processing notes](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.

*From: Richard E. Payne / 11 Apr 1997 09:05:25 -0400*
*Updated: April 29, 2004; G.Heimerdinger*

### 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

1. Concatenate daily 1 minute files into one file for whole cruise
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Edo depth error correction: replace bad value with previous value.
EN276 - Data gap from 20:11:57 Jan 19 (19.84163) through 18:21:52 Jan 20
     (20.76519). Linearly interpolated through it except for SW.
     Linear interpolation of SW from 19.84163 to zero at sunset, -4.0
     until sunrise, linear interpolation to value at 20.76588. Edo
     depth had a lot of error values which were mostly correctible.
     18,110 records, 1330 interpolated.
Cruise Exp  Spds Dirs  AT  RH   BP  SST  SSC  SWR  Prec
EN276 GLOBEC ---   ---   --- ---   --- ---   ---   --- ---

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## Data Files

| File |
|------|
| **emet_W15_1996.csv** (Comma Separated Values (.csv), 753.86 KB) <br> MD5:c2989a0dfbb04cb46d0dbe9f7600528c |
| Primary data file for dataset ID 2310 |

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## 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^2/second |
| ed_lw | long wave downward irradiance | watts/meter^2/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 |
| 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 | |

## Instruments

| Dataset-specific Instrument Name | Thermosalinograph |
|---|---|
| Generic Instrument Name | Thermosalinograph |
| Dataset-specific Description | Thermosalinograph used to obtain a continuous record of sea surface temperature and salinity. |
| Generic Instrument Description | A thermosalinograph (TSG) is used to obtain a continuous record of sea surface temperature and salinity. On many research vessels the TSG is integrated into the ship's underway seawater sampling system and reported with the underway or alongtrack data. |

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# Deployments

**EN276**

| Website | https://www.bco-dmo.org/deployment/57413 |
|---|---|
| Platform | R/V Endeavor |
| Report | http://globec.whoi.edu/globec-dir/reports/en276/EN276.pdf |
| Start Date | 1996-01-10 |
| End Date | 1996-01-22 |

| | |
|---|---|
| **Description** | broad-scale<br><br>**Methods & Sampling**<br>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.<br><br>**Processing Description**<br>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 & 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. 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 & 1m. Edo depth error correction: replace bad value with previous value. EN276 - Data gap from 20:11:57 Jan 19 (19.84163) through 18:21:52 Jan 20 (20.76519). Linearly interpolated through it except for SW. Linear interpolation of SW from 19.84163 to zero at sunset, -4.0 until sunrise, linear interpolation to value at 20.76588. Edo depth had a lot of error values which were mostly correctible. 18,110 records, 1330 interpolated. Cruise Exp Spds Dirs AT RH BP SST SSC SWR Prec EN276 GLOBEC --- --- --- --- --- --- --- --- --- |

**EN278**

| | |
|---|---|
| **Website** | https://www.bco-dmo.org/deployment/57414 |
| **Platform** | R/V Endeavor |
| **Start Date** | 1996-02-13 |
| **End Date** | 1996-02-25 |
| **Description** | broad-scale<br><br>**Methods & Sampling**<br>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.<br><br>**Processing Description**<br>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 & 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. 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 & 1m. Edo depth error correction: replace bad value with previous value. EN278 - Air temp went below -9.9 for a few hours after the first midnight but the Endeavor format only had room for 4 characters so all those values were ****. Subsituted -9.9 for ****. The rest of the file was fairly clean. 18,053 records, 104 interpolated. Cruise Exp Spds Dirs AT RH BP SST SSC SWR Prec EN278 GLOBEC --- --- --- --- --- --- --- --- --- |

**EN282**

| | |
|---|---|
| **Website** | https://www.bco-dmo.org/deployment/57415 |
| **Platform** | R/V Endeavor |
| **Start Date** | 1996-04-08 |
| **End Date** | 1996-04-20 |
| **Description** | broad-scale<br><br>**Methods & Sampling**<br>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.<br><br>**Processing Description**<br>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 & 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. 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 & 1m. Edo depth error correction: replace bad value with previous value. EN282 - Clean except there were about 20 overrange points in short wave radiation and the EDO depth was pretty noisy. 17,946 records, 0 interpolated. Cruise Exp Spds Dirs AT RH BP SST SSC SWR Prec EN282 GLOBEC --- --- --- --- --- --- --- --- --- |

**EN288**

| | |
|---|---|
| **Website** | https://www.bco-dmo.org/deployment/57416 |
| **Platform** | R/V Endeavor |
| **Start Date** | 1996-09-06 |
| **End Date** | 1996-09-13 |
| **Description** | long term mooring<br><br>**Methods & Sampling**<br>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.<br><br>**Processing Description**<br>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 & 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. 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 & 1m. Edo depth error correction: replace bad value with previous value. EN288 - Pretty clean. 10,713 records, 15 interpolated. Cruise Exp Spds Dirs AT RH BP SST SSC SWR Prec EN288 GLOBEC --- --- --- --- --- --- --- --- --- |

**EN290**

| | |
|---|---|
| **Website** | https://www.bco-dmo.org/deployment/57417 |
| **Platform** | R/V Endeavor |
| **Report** | http://globec.whoi.edu/globec-dir/reports/en290/EN290.pdf |
| **Start Date** | 1996-12-18 |
| **End Date** | 1996-12-22 |
| **Description** | process<br><br>**Methods & Sampling**<br>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.<br><br>**Processing Description**<br>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 & 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. 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 & 1m. Edo depth error correction: replace bad value with previous value. EN290 - Quite clean and short but SW,LW,EDOZ are all 0.0 throughout the file. 5181 records, 0 interpolated. |

**OC276**

| | |
|---|---|
| **Website** | https://www.bco-dmo.org/deployment/57441 |
| **Platform** | R/V Oceanus |
| **Start Date** | 1996-03-30 |
| **End Date** | 1996-04-13 |
| **Description** | long term mooring<br><br>**Methods & Sampling**<br>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.<br><br>**Processing Description**<br>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 & 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. 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 & 1m. Edo depth error correction: replace bad value with previous value. Cruise Exp Spds Dirs AT RH BP SST SSC SWR Prec OC276 GLOBEC --- --- --- --- --- --- --- --- --- |

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## Project Information

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

**Website**: 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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## Funding

| Funding Source | Award |
|---|---|
| National Science Foundation (NSF) | unknown GB NSF |
| National Oceanic and Atmospheric Administration (NOAA) | unknown GB NOAA |