

# Description of SCICEX Bathymetry Data from Bernard Coakley

Note: This information was compiled via email communication with Bernard.

**Summary:** This narrow-beam bathymetry data was acquired through the submarine's data system (Submarine Data Recording System or SDRS) for all the cruises. After the 1993 cruise, the SCICEX crew received six-minute sample bathymetry from the Arctic Submarine Lab (ASL). During subsequent cruises (1995-1999), the SCICEX crew was able to acquire the ship's data (navigation, bathymetry, etc.) with a program Bernard Coakley wrote during the 1995 cruise that captured and interpreted the data stream coming out of the SDRS. Note: Margo has bathymetry from SCAMP (Seafloor Mapping And Characterization Pods ) for 1998 and 1999. She should be sending this to NSDIC this spring.

**Temporal Coverage - year (day of year range):** 1993 (235-256), 1995 (085-128), 1996 (257-302), 1997 (246-275), 1998 (213-245), and 1999 (092-134)

**Total data volume:** ~520 MB

## Format

### CTD Data Files

ASCII text data, 2 columns. The CTD files contain ship depth information, which Coakley used to reduce the gravity data. It is the depth, derived from the CTD record, of the sail-mounted CTD these ships carried during SCICEX.

Column	Description
1	Time stamp YY+ddd:hh:mm:ss.sss where YY is 2-digit year, ddd is 3-digit day of year, hh is 2-digit hour, mm is 2-digit minute, ss.sss is 5-digit second (ss) and fraction of a second (.sss)
2	Ship (keel) depth (meters)

Note: Some files are gzipped (.gz), some are zipped (.Z), and some are not zipped at all.

### Nav Data Files

ASCII text data, 6 columns for 1993 and 1995 data files (no ship depth), 7 columns for 1996 – 1999 data files

Column	Description
1	Time stamp YY+ddd:hh:mm:ss.sss where YY is 2-digit year, ddd is 3-digit day of year, hh is 2-digit hour, mm is 2-digit minute, ss.sss is 5-digit second (ss) and fraction of a second (.sss)
2	Latitude

3	Longitude
4	Water depth total (meters)
5	Heading (degrees from North)
6	Velocity (knots)
7	Ship (keel) depth (meters)

Note: All but a few files are gzipped (.gz).

## VC Data Files

ASCII text data, 3 columns. The vc files are the gravimeter output.

Column	Description
1	Time stamp YY+ddd:hh:mm:ss.sss where YY is 2-digit year, ddd is 3-digit day of year, hh is 2-digit hour, mm is 2-digit minute, ss.sss is 5-digit second (ss) and fraction of a second (.sss)
2	Gravimeter output - the integer value is scaled to gravity with a Scale Factor and a Bias. (meters, scaled to mGals by the scale factor unique for each gravimeter.) (Coakley via email: It is necessary to know the scale factor and bias to scale the data into mGals. I can provide these scale factor values. It would probably be useful to include these in the meta-data for these files.)
3	2-digit status indicator for the gravimeter. If it is anything but zero, there is a problem. Other states include the following 0 - nominal operation 1 - platform problem 2 - sensor problem 3- both platform and sensor have a problem

Note: Some are gzipped (.gz) and some are zipped (.Z) and some are not zipped at all.

## File Naming Convention

### CTD Data Files

*ctd.dxxx.uu*

Where:

- *ctd* identifies this as containing depth from CTD profiles
- *d* stands for day
- *xxx* is day of year
- *uu* is the extension - .gz: gzipped, .Z: zipped, no extension: not zipped (Note: There does not seem to be a rhyme or reason to what is gzipped, zipped, or neither.)

## Nav Data Files

*nav.dxxx.gz*

Where:

- *nav* identifies this as navigation data (lat/lon, depth, heading, velocity)
- *d* stands for day
- *xxx* is the day of year
- *.gz* denotes that this file has been gzipped (Note: All but a few files are gzipped, those that are not, do not have an extension)

## VC Data Files

*vc.dxxx.uu*

Where

- *vc* identifies this as containing gravimeter output
- *d* stands for day
- *xxx* is the day of year
- *uu* is the extension - *.gz*: gzipped, *.Z*: zipped, no extension: not zipped (Note: There does not seem to be a rhyme or reason to what is gzipped, zipped, or neither.)