

SBE 19 SEACAT Profiler CTD

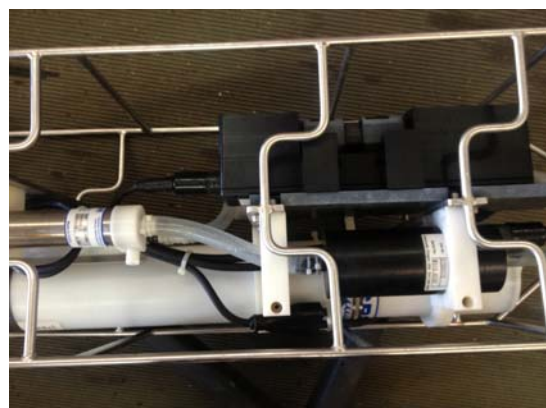
Conductivity, Temperature and Pressure Recorder

The SBE 19 SEACAT Profiler is designed to measure conductivity, temperature, and pressure in marine or fresh water environments to depths of 10,500 meters. The standard SEACAT operates in two modes. **Profiling mode** is designed for applications where vertical profiles of measured parameters are required; the sample rate can be varied from twice a second to once every 4 minutes in half-second increments. **Moored mode** provides time series measurements at sample rates of every 15 seconds to 8 hours, adjustable in 1-second increments.

Self-powered (9 D-size alkaline batteries provide 26 hours operation in profiling mode) and self-contained, the SEACAT features the proven Sea-Bird conductivity and temperature sensors and a precision semiconductor strain-gauge pressure transducer. The 1024K byte CMOS static RAM records 24 hours of conductivity, temperature, and pressure data while sampling at two scans per second (48, 96, or 192 hours with optional 2, 4, or 8 megabyte memories). External sensors may be powered and their frequency or voltage outputs acquired by the SEACAT. Setup, check-out, and data extraction are performed without opening the housing. Simultaneous real-time monitoring is possible using the SEACAT's three wire RS-232C interface.

Mike Ondruseks SBE 19 SEACAT CTD details

- * Software Version 1.59
- * SEACAT PROFILER V3.1d SN 2339 91/17/92 32:36:21.059
- * Temperature SN = 2339
- * Conductivity SN = 2339
- * strain gauge pressure sensor: SN = 177135, range = 500 psia, tc = -87# sensor 0 = Frequency 0 temperature, 2339, 03-Jun-08
- # sensor 1 = Frequency 1 conductivity, 2339, 03-Jun-08, cpcor = -9.5700e-08
- # sensor 2 = Extrnl Volt 0 Oxygen, SBE, primary, 1170, 07-Jul-08p
- # sensor 3 = Extrnl Volt 2 transmissometer, primary, CST-229PG, 23-Jun-08
- # sensor 4 = Extrnl Volt 3 WET Labs, WETStar fluorometer, WS1S-855P, 27-Jun-02
- # sensor 5 = Pressure Voltage, 2339, 09-Jun-08



Mike Ondruseks CTD at configured for Oahu-13 2012 September shadowing experiment

Processing the SBE 19 SEACAT data

I am using the newer software:

Seasoft V2: SBE Data Processing CTD Data Processing and Plotting Software for Windows
2000/XP File: SBEDataProcessing_Win32_V7_22_0.exe Downloaded on Sept 2012

Dir containing the processing config files:

C:\Users\Stephanie Flora\Application Data\Sea-Bird\SBEDataProcessing-Win32\

Raw data files: HEX files and a con file

DATCNV: Convert raw data to a .cnv file, selecting ASCII as data conversion format.

convert the data, make sure the transmissometer and fluorometer are in volts.

FILTER: Low-pass filter pressure to increase pressure resolution for Loop Edit, and low-pass filter temperature and conductivity to smooth high frequency data.

Lowpass Filter A = 0.5 sec (Cond and Temp)

Lowpass Filter B = 2 sec (Pressure)

ALIGNCTD: For a Seabird 19 the is 0, temp is 0.5 sec and Oxygen is 3 off pressure

CELL THERMAL MASS: $\alpha = 0.04$ and anomaly is 8

LOOPEDIT: Loop edit applied only to files which were in profiles.

DERIVED and ASCII out are next.

No wild edit or bin average, I will do these in Matlab

CTD filename and data problems

HDR file names	Max depth	Start time
091120112profile	88.50	Sep 12 2012 18:40:23
09112012soak	6.14	Sep 12 2012 19:50:33
09132102profile	60.98	Sep 14 2012 16:08:12
09132102soak	4.91	Sep 14 2012 16:43:30
700074	60.98	Sep 14 2012 16:08:12
700075	4.91	Sep 14 2012 16:43:30
70070	2.96	Jul 26 2012 08:57:01
70071	0.05	Jul 26 2012 09:04:05
70072	88.50	Sep 12 2012 18:40:23
70073	6.14	Sep 12 2012 19:50:33
9162012001	0.11	Jan 01 2080 00:00:00
9162012002	4.97	Jan 01 2080 00:00:00
9162012b003	120.53	Jan 01 2080 00:00:00
9162012b004	105.19	Jan 01 2080 00:00:00
9162012b005	4.39	Jan 01 2080 00:00:00
9172012006	120.27	Jan 01 2080 00:00:00
9172012007	0.11	Jan 01 2080 00:00:00
9172012008	4.91	Jan 01 2080 00:00:00
9192012001	0.11	Jan 01 2080 00:00:00
9192012002	4.97	Jan 01 2080 00:00:00
9192012003	120.53	Jan 01 2080 00:00:00
9192012004	105.19	Jan 01 2080 00:00:00
9192012005	4.39	Jan 01 2080 00:00:00
9192012006	120.27	Jan 01 2080 00:00:00
9192012007	0.11	Jan 01 2080 00:00:00
9192012008	4.91	Jan 01 2080 00:00:00
9192012009	125.34	Jan 01 2080 00:00:00
9192012010	5.36	Jan 01 2080 00:00:00
9_14_12076	113.06	Sep 15 2012 16:39:01
9_14_12077	4.39	Sep 15 2012 17:15:11

Day number	LogSheet date	Time	Type (Soak/Profile)	Problems
Day 1	20120911	22:40	Profile	
Day 1	20120911	23:50	Soak	
Day 2	20120913	20:07	Profile	Trans tube off
Day 2	20120913	20:43	Soak	
Day 3	20120914	20:24	Profile	
Day 3	20120914	21:15	Soak	
Day 4	20120915	20:36	Profile	no data??
Day 4	20120915	21:21	Soak	
Day 5	20120916	21:28	Profile	DELETED & Mar 2013
Day 5	20120916	21:44	Profile	
Day 5	20120916	22:15	Soak	

No idea which hex files goes with this data, there are 13 possible hex files for these 4 log sheet entries

Day 6	20120917	19:36	Profile
Day 6	20120917	21:36	Soak
Day 7	20120918	20:49	Profile
Day 7	20120918	21:37	Soak

HEX file names	HDR filename(s)
700073	None
700074	09132102profile.hdr and 700074.hdr
700075	09132102soak.hdr and 700075.hdr
70070	70070.hdr
70071	70071.hdr
70072	091120112profile.hdr and 70072.hdr
70073	09112012soak.hdr and 70073.hdr
9162012001	9162012001.hdr
9162012002	9162012002.hdr
9162012b003	9162012b003.hdr
9162012b004	9162012b004.hdr
9162012b005	9162012b005.hdr
9172012006	9172012006.hdr
9172012007	9172012007.hdr
9172012008	9172012008.hdr
9192012001	9192012001.hdr
9192012002	9192012002.hdr
9192012003	9192012003.hdr
9192012004	9192012004.hdr
9192012005	9192012005.hdr
9192012006	9192012006.hdr
9192012007	9192012007.hdr
9192012008	9192012008.hdr
9192012009	9192012009.hdr
9192012010	9192012010.hdr
9_14_12076	9_14_12076.hdr
9_14_12077	9_14_12077.hdr
back011	None
back012	None
back013	None
back014	None

Below is my guess for which files go with which logsheets. I think I am OK until I get to day 6 and 7. There are 4 time in the logsheet and 18 files.

This listing below is from an email from MikeO defining which number are which day. With this I can get the 6th and 7th day,

919201200 files

- 1 = nothing
- 2 = 9 15 soak
- 3 = 9 15 profile
- 4 = 9 16 profile
- 5 = 9 16 soak
- 6 = 9 17 profile
- 7 = nothing
- 8 = 9 17 soak
- 9 = 9 18 profile
- 10 = 9 18 soak

HDR file names	File time	Time in Logsheets
091120112profile.hdr	2012 09 12 18 40 23	2012 09 11 22 40 23
09112012soak.hdr	2012 09 12 19 50 33	2012 09 11 23 50 33
09132102profile.hdr	2012 09 14 16 08 12	2012 09 13 20 07 12
09132102soak.hdr	2012 09 14 16 43 30	2012 09 13 20 43 30
9_14_12076.hdr	2012 09 15 16 39 01	2012 09 14 20 24 SS
9_14_12077.hdr	2012 09 15 17 15 11	2012 09 14 21 15 SS
9162012001.hdr	2080 01 01 00 00 00	2012 09 15 20 36 SS
9162012002.hdr	2080 01 01 00 00 00	2012 09 15 21 21 SS

9162012b003.hdr	2080 01 01 00 00 00	2012 09 16 21 28 SS
9162012b004.hdr	2080 01 01 00 00 00	2012 09 16 21 44 SS
9162012b005.hdr	2080 01 01 00 00 00	2012 09 16 22 15 SS
9192012006.hdr	2080 01 01 00 00 00	2012 09 17 19 36 SS
9192012008.hdr	2080 01 01 00 00 00	2012 09 17 21 36 SS
9192012009.hdr	2080 01 01 00 00 00	2012 09 18 20 49 SS
9192012010.hdr	2080 01 01 00 00 00	2012 09 18 21 37 SS

MikeO email sorted out which was which for the last two files. Without Mike info there was no way to sort out which file goes with which hex/hdr file.

This is a listing of the renamed files. For Days 1-5. I think for the files with times that are close in them (Days 1-3) I am confident I have the right file matched up with the right time/day. For day 4 and 5 I am less certain.

Day#	HEX/HDR renamed	Max Depth	File time
Day1	20120911_2240_profile	88.50	Sep 12 2012 18:40:23
Day1	20120911_2350_soak	6.14	Sep 12 2012 19:50:33
Day2	20120913_2007_profile	60.98	Sep 14 2012 16:08:12
Day2	20120913_2043_soak	4.91	Sep 14 2012 16:43:30
Day3	20120914_2024_profile	113.06	Sep 15 2012 16:39:01
Day3	20120914_2115_soak	4.39	Sep 15 2012 17:15:11
Day4	20120915_2036_soak	0.11	Jan 01 2080 00:00:00
Day4	20120915_2121_soak	4.97	Jan 01 2080 00:00:00
Day5	20120916_2128_profile	120.53	Jan 01 2080 00:00:00
Day5	20120916_2144_profile	105.19	Jan 01 2080 00:00:00
Day5	20120916_2215_soak	4.39	Jan 01 2080 00:00:00
Day6	20120916_2128_profile	120.53	Jan 01 2080 00:00:00
Day6	20120916_2215_soak	4.39	Jan 01 2080 00:00:00
Day7	20120917_1936_profile	120.27	Jan 01 2080 00:00:00
Day7	20120917_2136_soak	4.91	Jan 01 2080 00:00:00
Day8	20120918_2049_profile	125.34	Jan 01 2080 00:00:00
Day8	20120918_2137_soak	5.36	Jan 01 2080 00:00:00