

WBZ
May 2012

Ocean Acidification Research Cruise R/V weatherBird II

May 8th, 2012

- 1000 (eastern) 800 departing ★ about 1 min behind ship log
- Have Aft System this time
 - Working with BO Yang (PHD student @ USF) some for Water Samples
 - he has a Spectrophotometer which I'll use some to check our data for surface samples
 - Surface samples will be taken every few hours while transiting (32 hour transit to first station)

1010 flowthrough started; closed though

1022 started sonde logging
→ data file MAY08

1026 Aft -CO₂ started

1028 Aft pH started

1035 Surface Sample 12BHM03-001
Temp 26.42 Sal 35.94

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1229 Surface Sample #2
Temp 25.57 Sal 36.65

1232 No real time data on Aft CO₂
data recording, Restarting logging

1238 Aft CO₂ restarted

1239 pH - no real time data, downloaded
data
- some fields hav -I#IND
→ restart & check in a few hours

1240 Aft pH restarted

1326 Surface Sample #3
Temp 25.40 Sal 36.76

Took 3 great samples for test
run pH & carbonate with BO

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Spectrophotometer pH Setup

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Spectrophotometer Steps (pH)

• turn on 245 min before

(Wait for green light)

• Open Chem Station Program

• 1/2 hour of samples in heating box

• Program

- select user

- Check status

→ lamps on left have color

- load Automation

→ pH.a

- load Sample Table

→ pH.ST

- load Macro

- Config → Command line

Type "micro.pH.macro"

Enter

- Inputs

1 - Current station

1 - SmpInf

Station # (99)

Cast # (99)

Long

Lat

depth 0

Sal

Temp, bottle #

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- Program asks for blank sample to be placed in reading box
 - it will measure the baseline a few times & average
- Program prompts for indicator dye
 - put in 1 unit of dye
 - Press Okay
- Program does a Background Check to see if 700 nm is above 0.002
 - if above try moving the cuvet around & cleaning the ends
 - if pass, Press Okay
 - it does 6 measurements & Avg
- Program prompt
 - 2 - acceptable
 - 3 - Questionable
- Program asks if you want to run another sample at this station

Also Carbonate Spec System, but I don't think that will help much (Bo sys : it's not super accurate)

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- 1328 pH Sample #3 on Spec
- 1505 Surface Sample 4
Temp 25.51 Sal 36.9
- 1627 Surface Sample 5
Temp 25.44 Sal 36.88
- 1637 Checking Att-PH
 - Stopping & Downloading
 - Starts w/ a few ~~IT~~ but has data after
 - ★ time stamp 4 hours ahead
- 1643 Started Att-PH again
- 1828 Surface Sample #6
Temp 25.25 Sal 36.72
- 1929 Surface Sample #7
Temp 26.11 Sal 36.59
- pH Spec Sample of #7
Processed at 2005

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2032 Surface Sample # 8
Temp 25.9 Scl 36.71

2142 Surface Sample # 9
Temp 25.81 Scl 36.73
* grease didn't take ^{→ 66 gpc in sample} - emptied bottle
& refilled

2251 Surface Sample # 10 BW
Temp 25.74 Scl 36.69

Wednesday, May 9th, 2012

0004 Surface Sample # 11 LSW
Temp 25.67 Scl 36.64

0100 Surface Samples # 12 & 12dup
Temp 25.16 Scl 36.73
* hose had fallen out of sander bucket

0204 Surface Sample # 13 BW
Temp 25.98 Scl 36.78

0313 Surface Sample # 14 SM
Temp 25.96 Scl 36.69

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0400 Surface Sample # 15 JB
Temp 25.79 Scl 36.69

0500 Surface Sample # 16 KLD
Temp 25.46 Scl 36.66

0612 Surface Sample # 17
Temp 25.39 Scl 36.60

0720 Surface Sample # 18
Temp 25.32 Scl 36.35

0845 Surface Sample # 19
Temp 25.38 Scl 36.13

0952 Surface Sample # 20
Temp 25.21 Scl 36.27

1114 Surface Sample # 21
Temp 25.13 Scl 36.05

1226 Surface Sample # 22
Temp 25.67 Scl 35.97

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1346 Surface Sample # 23 LSW
Temp 25.72 Sal 36.04

1458 Surface Samples 24 & 24 dup
Temp 25.83 Sal 36.56

1610 Checking Aft CO₂
looks good, restarting with
new data file

1613 Aft CO₂ restarted

1613 Checking Aft pH
looks like it stopped recording
due to low battery
- it stopped recording at 4:21 pm
at 5A/12 (4 hours ahead though)
lots of -1#IND

1619 Launched Aft pH
checked plugs, switched from
UPS that was having issues

Can see the real time status
of pH

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1628 I'll let the pH-Aft run for a bit
if the -1#IND keeps showing up,
I'll try flushing the instrument
with Deion Water

1634 Surface Sample # 25
Temp 25.86 Sal 36.39

1743 Surface Sample # 26 LSW
Temp 26.01 Sal 36.58

1937 Checking Aft pH
most are -1#IND

1940 Checking Aft CO₂
Seems fine

going to try cycling the pumps
with DI water
CO₂ 30 cycles → 60
pH 60 cycles

1954 doing "pH flush" 50 cycles 3sec interval

1958 restarting Aft-PH
2000 Aft CO₂ started

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2159 flow-through pump switched

Station DSH09

Cast 1 in 2126 out 2248

Cast 2 in 0016 out 0035

Sample #	Cast	Bottle	Area	depth
2307	2	12	Top	2
2307	1	6	Mid	1200
2307	1	2	Bot	2300

Thursday, May 10th, 2012

Station D.W.H

Cast 1 in 0700 out 0803

Cast 2 in 947 out 1000

Sample #	Cast	Bottle	Area	depth
1022	2	12	Top	2
815	1	8	Mid	750
815	1	2	Bot	1500
1018	2	10	C _{TOP}	25
1015	2	8	C _{max}	40
1012	2	6	C _{Bot}	50

0820 flowthrough stopped due to waves/weather

Stopped sonde logging
flushing Aft w/ DI water

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May 10th, 2012

0825 stopped & downloaded Aft data
- pH has mostly -1# IND values

1100 weather is supposed predicted to get worse today & tomorrow

Station DSH 10

Cast 1 in 1912 out 2013

Cast 2 in 2122 out 2130

Sample #	Cast	Bottle	Area	depth
36	2	12	Top	2
36dup	2	12	Top	2
37	1	8	Mid	750
38	1	2	Bot	1510
39	2	10	C _{TOP}	20
40	2	8	C _{max}	40
41	2	6	C _{Bot}	50

Cast 2
The air values/vents
were open
→ exposed to
atmo some

2000 ship flow through turned on

2003 sonde logging started

2012 Aft ~~data~~ CO₂ started

- not starting Aft pH; the values are mostly messed up (-# IND)

Emailed Lisa & Paul about it
no solution yet.

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May 10th, 2012

2334 surface sample #42
Temp 24.66 Sal 34.58

★ Collected two cuvetts for Bo
to do the spectrophoto. pH
on
R = 2.21067
R = 2.212349

Friday, May 11th, 2012

0306 surface sample #43
Temp 24.71 Sal 33.46

Station DSH08

Cast 1 in 0541 out 0626
Cast 2 in 0756 out 0820

Sample #	Cast	Bottle	Area	depth
0848 44	2	12	Top	2
0653 45	1	10	Mid	400
0653 46	1	2	Bot	1100
0848 47	2	9	Top	25
0848 48 & dup	2	8	Max	37
0836 49	2	6	CBot	50

★ Bottles 6-8, 9, Cast 1, Came up
shattered

★ Bottles 5 & 10 had slight leak in bottle where
articles to structure

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May 11th, 2012

M. ★ 0848 processed samples and on
will use 60 µL merc. chloride instead
of 100 µL

0740 checking Aft CO₂ System

- looks like power tripped on it,
ran out of battery after 0635
(1035 on machine)

→ reset the Power Strip
(the power in the lab flickers a bunch)
bring a UPC next time?

- Downloaded data

0744 restarted Aft CO₂

★ looks like real time date display
only works if you haven't unplugged
the USB after launching

0940 had sonde hose out for ~ hour,
to balance flow

Station DSH07

Cast 1 in 1021 out 1022
Cast 2 in 1230 out 1241

Sample	Cast	Bottle	Area	depth
1248	2	11	Top	2
1100	1	5	Mid	200
1056	1	2	Bot	400

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May 11th, 2012

- 1458 flowthrough turned off
- 1515 turning off Sonde logging
- 1518 turning off Aft system
 - it didn't record anything!
 - low battery
 - flushing w/ DI water
- 1522 Cycling pumps on both pH & CO₂
 - ~~the~~ machines respond when plugged in
 - so, I'll leave the CO₂ plugged into the computer next time & check after a couple hours

Saturday, May 12th, 2012

Station PCBO4

Cast 1 in 2330 out 00:04
 Cast 2 in 0116 out 0125

	Sample #	Cast	Bottle	Area	depth
0148	53	2	12	Top	2
0023	54	1	9	Mid	100
0023	55	1	2	Bot	200
0133	56	2	2	Top	50
0023	57	1	11	C Max	70

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- 0038 Flowthrough is on
Started Sonde logging
May 12 file
- 0104 Switched Aft CO₂ power cord w/ pH
it was taped together, maybe it isn't holding the connection → no battery signal
- 0104 Started Aft CO₂
 - leaving USB plugged into computer & computer on
- 0136 Aft CO₂ has a CO₂ measure!
seems to be working, check in few hrs
- 0243 Surface Sample # 58
Temp 24.06 Sal 35.89
Bo doing Spectro. pH reading
R = 2.194071 R = 2.205503
- 0608 Surface Sample # 59
Temp 24.51 Sal 35.85
- 0613 Aft CO₂ still taking data!

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May 12th, 2012

~~0824 flowthrough off~~

0824 flowthrough off (turned off around 0800)
Sonde off
Aft CO₂ stopped
- data downloaded

Station PCB03

cast 1 in 0926 out 0940
cast 2 in 1052 out 1100

	Sample #	Cast	Bottle	Area	depth
1109	60	2	11	Top	2
1109	60 dup	2	11	Top	2
0955	61	1	6	Mid/6m	50
0955	62	1	2	Bottom	100
0955	63	1	8	Top	20

~~0955~~

1800 Science ~~ops~~ ops halted until first light tomorrow

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Sunday, May 13th, 2012

Station PCB01

Cast in out 0657

	Sample #	Bottle	Area	depth
0716	64	12	Top	2
0709	65	6	Mid	10
0705	66	2	Bot	18

0803 still wavy - no flowthrough

Station PCB02

Cast in 1154 out 1205

	Sample #	Bottle	Area	depth
1225	67	12	Top	2
1218	68	7	Mid	15
1214	69	2	Bot	30

1751 still wavy; trying flow-through
~~try~~ will turn off if sucking air

1753 Sonde started; MAY13 data file

1756 Aft CO₂ started

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AOI Att CO₂ still running & collecting data

1904 Surface Sample #70
Temp ~~25.04~~ 25.04 Sal 35.18

PH Sample
#701 R = 2.27486
#702 R = 2.291486

2157 Surface Sample #71 KLD
Temp 25.71 Sal 36.43

2330 Science ops stopped until first light (flowthrough still going)

Monday, May 14th, 2012

0000 Surface Sample #72 KLD
Temp 25.43 Sal 36.46

0305 Surface sample #73
Temp 25.432 Sal 36.46

0622 Surface Sample #74
Temp 24.86 Sal 36.48

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Station PCB05

Cast 1 in 0703 out 0724
Cast 2 in out

	Sample #	Cast	Bottle	Area	depth
0954	75	2	12	Top	2
0736	76	1	5	Mid	100
0733	77	1	2	Bot	200

1336 Surface Sample #76
Temp 26.05 Sal 35.8

Station ~~PCB05~~ PCB06

Cast 1 in out
Cast 2 in out

Sample #	Cast	Bottle	Area	depth
79			TOP	
79dup			TOP	
80			MID	
81			BOT	

1555 CTD is blowing a fuse, non function
SIPPERing to PCB11 &
doing messenger bottles
ETA ~2330

→ Sipper lost communication
PCB11 ETA 2050

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1853 Surface Sample #79 & dup
Temp 26.18 Sal 35.68

2136 Messenger System for CTD bottles
isn't going to work; the
messengers don't fit the cable

2306 PCB11 - Surface Sample #80
Temp 25.26 Sal 36.14

Tuesday, May 15th, 2012

0207 PCB06 - surface sample # 81
Temp 25.40 Sal 35.84

JB ~~★~~ CTD broken; water taken
from flowthrough

0602 Surface Sample 82 KLD
Temp 24.55 Sal 36.18

0654 Surface Sample 83
Temp 24.34 Sal 35.34

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May, 15th, 2012

0810 Surface Sample #84
Temp 24.59 Sal 35.10

0921 Surface Sample #85
Temp 24.72 Sal 33.99

1055 Surface Sample #86
Temp 24.31 Sal 33.34

1128 flowthrough off
Sonde stopped
Aft CO₂ stopped & downbrake

1132 cycling pump 60x w/ DI water

1135 2nd pump cycle

1145 some sand blast grit came out of
Aft CO₂. When I was draining
the water by (check last cruise)
it was deployed on Feb

1230 Arrived in Pensacola Port

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