

1/25/20

Local

1000

TG Thompson departing Cape Town
 We have the following scientists aboard from
 BLOS (and vicinity):

R. Behr
 D. Duggan
 B. Bowler
 C. Fowler

S. Rauschenberg (working w/ Peter Morten)
 Sydney Greenberg (Colby Senior)
 Marcia Train (educator) at sea from Long
 Island, Maine

We are set up to make the following
 measurements:

UV system (w/ ac-9, by ~~transmitted~~ al fluor,
 bbf, ocean fluor), acid-base tit, PIC,
 SST, SSS.

light microscope

Bow-mounted Hyperstar [w/ ED sensor
 on instrument mounted at bow]

OCP -

Temp control incubators on fantail

Air sampler (of Phalaris) sample air with

0.1 μ m polycarbonate filter to then do

bioassays

14 C - measurements

Plan

Plan is to do a zonal survey along Agulhas

current through PIC features, forming VPR

② Sample 2 PIC-rich: alders (deploying diver,
 VPR, radial survey, ~~CT~~ survey, Carlson

experiments w/ ammonia (w/ NO_2 , H_2S , CO_2)

+ Fe + E+S; control, dinitr. These will be

measured in cultures on deck. Final morphological

Other equipment brought: McGinty

Recorder: Bell - contained mist also ok CT

Morton: 1 μ m clean, oxygenated

while maintaining 2 μ m for low Fe

work. TM can also aboard

Recd 1-25-20

400 Science meeting -

400 Dave send OCP man. time burned a component on turn-on. Small of electrical stuff

26:20

400 Baluh com. worked on dry schedules and cruise planning. Very complicated!

000 Wind picking up. Close off belt. No Shake down

Have TO

400 WU again - Reddy

1/27/20

2239 0030 GMT Ship went completely dark

No propulsion NADA

400 GMT power coming back up. Ship still stopped

We will have no RAR data for first count so assume floor may be off

$I_2 = I_0 e^{kz}$ $\ln \frac{I_2}{I_0} = kz$ $\frac{\ln 0.11}{2.0m} = k$ $\frac{4.6}{2.0} = k$

Target light depths

Depth (m)	Count	Count Rate
1	50	100 *
2	36.8	73.6 *
3	26.1	52.2 *
4	11.7	23.4 *
5	5	10.0 *
6	3.6	7.1 *
7	1.9	3.8 *
8	0.2	0.6 *

Warning 2% of 8 days of measured floor may include

~~Target light depths~~

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see below dip calculator spreadsheet

4 1-27-20

0400 G4 TMC NISKIN X deploy
0615 TMC NISKIN X ~~undeployed~~
0627 SAS Turned on
0645 TMC NISKIN Recover

0700 Test Tow TM fresh
0745 Recover TM fresh
VPR Tow

1700 VPR Recover due to deteriorating weather

2007 STN 2, CTD - 750m
-38.767 x 26.2328

2112 CTD Recover

1-28-20

0325 Bruce and I figured out the bar 7. light (we think!) in CB1 cruise. ~~Stn 9041~~ we undeployed it the following day. The light depth was ~~2 (m)~~ 2.1m and showed the following % light
59.4 0.28 26.1 with these depths
39.2 1.93 5
33.7 3.65 4
21.7 11.7 3
15.7 21.1 2
10.1 36.8 1
← we used to put fluor max sample in the bag seven though it should be in 1%.

∴ We assume that our bags have these percentages and note the two yellow cells in light data calculator spreadsheet are ~~not~~ sampled.

1-27-20

In summary, for this trip where we have no light data (since no casts near noon)
1) Calculate proper depths assuming 1% light max is at 1% (this is asked and can be referenced to AWT publications by Poston et al)
2) Align bags 1, 2, 3, 4 & 6 (not 5) to actual depths.
3) Put fluor max sample (nominal 1% depth) in 1.9% bag
4) Cover incubators at night!

1-28-20

0341 CTD Cast (Productivity cast)

Event 2020128-0341 - deploy

0410 first bottle trip at 750m

0450 last bottle trip at surface

0450 CTD recovered 2020128-0450

2138 CTD 4 Deployed

-38.8105 x 30.1489

Very strong current @ surface

high wire Angle

Ship in 'drift mode' instead of DP

2248 CTD Recover

-38.8043 x 30.1561

STN 003-01

1/27/20

2305

VPR down

1/28

0400

SAS on 38.9372 x 10.1110

1/29

Time

VPR

0235 1/30

CTD productivity cast 5000
Event 202001300235
-39.18835 x 033.2991

0319

SAS on Event 202001300319

1/30/20

1618 Preparing two samples for FF counts,
6.5 m and 50 m at Sta 5
Event 202001300235 cast
Lat - 39.18835 033.2991E
will filter 100-ml on 0.4 μ m polycarbonate,
Jumbo Slide #1 50.5 m Images IMG002 - IMG042 all 400x
A-20 Slide #2 50 m Images 400x Images 045-076

0910 Finished w/ TM fish, filling barrels,
departing str. deploying VPR but we
will leave station 5 for WPC (not B)
to save time. -39.28845 x 033.1400E

Conversation w/ Pete Martin re experiment #1
amendments

6871 11.2-11.6 lat Temp 19°C - 12°C

at 19°C Surface PO_4 was immeasurable

$Si(OH)_4$ 0.1
 Fe 1.6
 Fe 0.15

300 m

$NO_3 = 11 \mu M$

$PO_4 = 0.8 \mu M$

$Si(OH)_4 = 4.6$

$Fe = 0.3 mM$

A) B) C) D) E) F)
+ NO_3 , + $Si(OH)_4$ + Fe , $Si(OH)_4$ + Fe control SAMW
12 μM 12 μM 4 μM 12 μM + 1 μM 0

4/31/20

0820 STN 006.01 CTD cast
-39.5677 034.9493

Event 202001310820

Took 2 samples for mic. counts
at 3m & 40m (fluor max)

No time to look at. Do tomorrow

2/1/20

0052 STN 007.01 CTD cast
-39.4952 034.1997
Event 202002010052
Eddy (or filament center)

0710 Moving ship N to periphery of eddy to
set things up for VPR tow back through
center

Microscopy of station 006.01
3m Images IMG-0077-114 all 400X

Note in images 105-114 a leptophyte w
holocarpus and leptocarpus

← Acanthion quaternaria

0080
0081
0082

2.7

2/1/20
STN 006.01 40m images 115-148 fluor max
Images 115-118 show a leptotrophic diene
with internal covalent, 119, 120 show other
diene with different exposures for bioremediation
(but, moved stage from previous 2 photos)

1056 Filling microscope samples in
007.01 100m per sample

Img 8 = 12.6m

Img 4 = 57.8m

Microscope work up of CTD cast 007.01 12.6m
Begin img 0149.5PG - 0173.5PG. All bright field

→ 0174.5PG

57.8m Begin image img-0174.5PG
ending w/IMG-0209.5PG

Have seen Acanthion quaternaria see p 8

Microscopy

Synecophora odd type 1 (PSS Young et al)

2349 STN 008.01 Event 202002012349

Prod cast -40.4995 034.2006

0605 Viewing microscope samples stn 008.01
at 8.7m

First picture IMG-0210.5PG-0249.5PG

40m IMG-0250.5PG-IMG-0290.5PG

Saw Synecophora tubifera (Acanthion sp)

2/3/20

0748

Stn 9.01 Event 202002029.01
 5m water east on North bound
 lane

1220

STN 10 CTD

-39.4751 x 39.1997

1640

STN 11 CTD

-39.0015 x 34.2

2036

STN 12 CTD

-39.501 x 39.1995

0

2/3/20

0315

Micro viewing stn 12 (Agulhas Current)
 All 400x Vis. Bury, epibio, epi green
 12 m Very little material

Begin Image 0002.JPG - Image 044.JPG
 note image 001 is green epi and image 012 and
 blue epi excitation

Stn 12.01

54 m Also little material

Mostly Ebury-like catagories

Image 045 → 079.JPG

2/3/20

1030 GMT CTD 013.01 event 202002031030

-39.4752 035.4670

1949 CTD 14 - 20200203.1949

-39.475 x 34.8335

1847 CTD 15 - 20200203.1847

-39.4748 x 34.2003

2241 CTD 16 20200203 2241

-39.4753 x 33.5653

2/4/20

0222 CTD 17 Prod cast 202002040222

-39.4749 x 032.9163

1010

Viewing microscope samples from stn 013.01
 As used beginning at 400x Bury, epibio, epi green, epi
 3.9m - blue than epi green

Prod beginning at Image 001.JPG - Image 049.JPG

17.7 m Stn 17.01 Prod beginning Image 050.JPG - Image 098.JPG