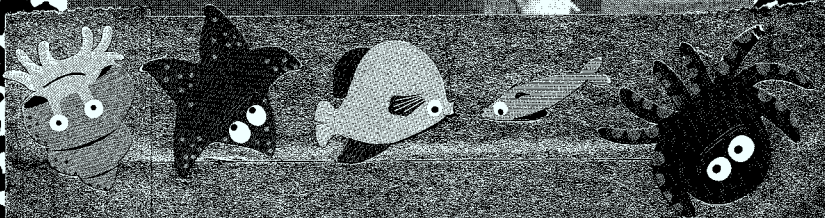


LAB NOTEBOOK



7/12/2011 - 7/23/2011

MRS. K. - Western Flyer

Heather Craig Olin
617-435-7323

7/12/2011

! Button #

18743C

18740A

1871A7

18745E

187475

1874EA

1874D3

1874BF

187341

HP

SS

SS

SS

SS

SS

SS

SS

SS

SS

15mcs #

8

9

12

5

7

6

3

2

10

Science Meeting

1830

General

• go over

• ROV ops

- night labored equipment on ROV

- can dive checked on 6:30 launch

↳ 1 - 2 science folks in control room

- video GIS database, talk to pilots

- break for breakfast - vehicle, hits holding 4 hr

- morning activity: charge ESP (4 hrs)

- science program (3 main roles)

• main USCI camera chair (chief sci. on watch)

• video deck (annotation & switch tapes) → Charles

• GIS navigation system

↳ me watch list

→ post

- start tape near bottom, not record fully til

- charging is done

- video annotation = note taker (VARS station)

- chief sci chair: heads of gets recorded on video

- Hurricane Temp box: central repository for scanned notes

- during charge time (4H) Doug & Scott

- Drive Plan - trying to make up last day, Charles

• on white board

- mistakes 1st & last day for context

- Basket: 1st dive - big drawer w 9 15mcs

• other side: push cores bio boxes → 1g & 5m.

also biotubes

- objective - can get ESP up during daylight on the 19

but go to early AM on 20th if necessary th

1

Askes: little bigger than a football field

Chimneys

- mushroom

- inferno

- well

- leave 2 pm
- need to pm
- check in with crew/captain about evening retrieval on the pm
- request early dive on the 18th (1 hr early)
- if extra time: push cores, video transects
- also need suction sampler - maybe back group
- Now: Walk up water man plan
- Dave wants long cores ~ the 16th

* Daily science meeting at 6, right after dinner

- at end of any dive when leave asks Dave directs
- Clague group doesn't need to be around early am

- Cruise logs - emailed to each day - Pete posts
- sign up street - dive synopsis + who you are & note in
- big picture
- 2-3 photos (boat & bottom)

- Clague night ops: after sub up use rock clusters /
- start glass cores on the 15th on well deck

Annotation

- 1 frame grab - can change camera
- 2 frame grab - can change camera
- 3 frame grab - can change camera
- 4 frame grab - can change camera
- 5 frame grab - can change camera
- 6 frame grab - can change camera
- 7 frame grab - can change camera
- 8 frame grab - can change camera
- 9 frame grab - can change camera
- 10 frame grab - can change camera
- 11 frame grab - can change camera
- 12 frame grab - can change camera
- 13 frame grab - can change camera
- 14 frame grab - can change camera
- 15 frame grab - can change camera
- 16 frame grab - can change camera
- 17 frame grab - can change camera
- 18 frame grab - can change camera
- 19 frame grab - can change camera
- 20 frame grab - can change camera

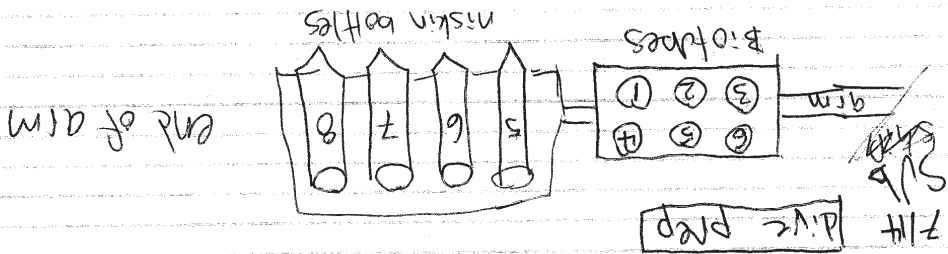
request cooix camera from H/D camera
than from H/D camera

Video: 2 H/D decks, start w/ top can switch bottom (read)

- VPS annotation
- on screen above
- types ~ 1 hr - set timer, tells what tape is recording
- start dive w/ tape time, code of / don't restart
- on new tape - tell CSCI object to change to look
- label at beginning of each dive - use tape to look
- at end of each dive, rewinding each tape
- play & record
- together
- stalls
- recording

need to login to GUL - login as guest
 : connect to VCR (ask for keys)
 : seq. # = dir # w/ 1 each dir, corresponds w/ labels
 : tap # stays w/ 1 each dir, corresponds w/ labels
 Annotate: sample collections, events to make note of
 create new user account: user name & password "Preston"
 GUL: [S] = sample [F] = frame grab, starts annotation
 - connect w/ appropriate "person" for the right sample ID
 - initial "dependencies" person for the right sample ID
 - when switch off, change tape # in GUL
 lots of layers to switch on/off during drives
 Arcing nav tabs = real time tracking window (minimize ok)
 Rev & Shn: trans of layers
 mark points = break down trail of dir, mouse symbol
 grab left hand from vehicle & where you clicked
 help w/ navigate - crack, VCR of "Mushroom"
 compass dead: draw where you are to where you want to go → range & bearing
 when collected sample - put sample # in comment
 : also read on paper table place in sample drawer
 : at new mark point file (2-5pm) is input
 : new mark score tell left/long keeps crumpling - system get
 : study - tell left/long keeps crumpling - system get
 : identify button - set to 2m res map of Area 1
 : click on map, width 4-5m, height 4-5m, meters

around 0800 chairs & I took mineral tubes out of smars
 the anox (?) jar & took mineral tubes out of smars
 talked w/ Bill about sample collection
 made self. d. z sea water & got RMA label for bottles
 for today's dive Biothanes 223 = self. d. r H₂O
 0 = RMA label
 1435 = SW



Daily Summary: Slow day (since we had yesterday in
 to prepare (thankfully chairs was a lot of help)
 ismarts [re-epoxying some things - EtOH poster, affected
 dive w/ 50% closed bottles? - wined ismarts (litters
 hanging w/ wires ready to close] tubes (not anhydride)
 we put mineral tubes out of acid & into DI water
 in 10% He. ground 12 hrs later (~2000) - left in glass jar.
 Tomorrow we get de gases & dive the sed & something will go
 ismarts. I'm worried to be part of an ROV
 terribly wrong, but excited to be part of an ROV
 dive.

First Dive

7/14

sub dove amount 1330

Notes: 2:08 sitting in dark control room waiting & etc. etc. nothing but specs on the video (decent) - see a few red sm. animals (?) & a fish

Unit's on video, Bill in Grid Sci Chair/eye at station

Doc Richards dive # D252

see bottom 2:24

(frames on my watch)

lands right near chimney - Claire thinks it was hell

chimney looks like a chimney, looking covered, deeper weights

fish chimney, hanging out & sea star

passing over, we are sure we are where

the warm in crack in pillow lava

marked at some kind square

at right chimney (inferring) white mats

through out the warm & radiating streaks

looking 10m bearing 073 → washmill

now we are sticking / hot fluid thick ring

smaller of white mat of base - looks more active than

crude proto mosaic w/ lots of flow of deep - tensor

close of video lots of worms - the worms

should be collected here, also impd(?)

- taking temp here 29 cm

Chris has fresh VHS

temp probe: grey & white mostly warm

no tube worms

thick ring of olive (Alvinella?) base

streaks (thick ring) out from base

2:45 mag of 1.5 mcs

video time of 25:45

red was about 10m

about 25:45

open

frame grab

with world to do

0252 cont.

• depth 15+1, taking Temp at base of marshmellow
 • lots of water
 • lots of picnigord-sea spiders

Temp in white mgt bouncing a lot
 moving slightly off
 T at 15°C
 fambase to white

• dead T in ashmums flow - high of 94°C
 • in silty diffuse flow (cm, fluctuant mgt)
 • candidate site - knob of base of marshmellow - recorded bearings / heading on under

• go back to inferno to have larger open tops to look for
 • going to base of inferno to look for
 • place to set esp
 • see white mgt of base & change higher up
 • more triangular white trails around base
 • sea star / rope in screen 00.43.56 on under
 • long chimney coming out of a hole
 • found 242 m x

• lot of white mgt of surrounding pillows
 • high of 27°C of take worms 25:44
 • looking for paper place to put esp more
 • (inferno)
 • sediment trap experiment 54:42 - on frame
 • - 57:15
 • - 57:15 shot of both vents

• from inferno to other structure on photo
 • mosaic

switching tape → 2

• 5 m mount w/ markers #64, #121 w/ experiments

5:10 ± food over (7/15) for I envy

thru (scattered) Part. #7 top

more in a line to tip close all the way 2:32:03 2 4:54

found the clump of 4.45 max 2:11:50 (1) 20°C
found the clump of 4.45 max 2:11:50 (1) 20°C
found the clump of 4.45 max 2:11:50 (1) 20°C

Back to Marshmallow area - where we found 90 15%
Back to Marshmallow area - where we found 90 15%
Back to Marshmallow area - where we found 90 15%

at 285 well for 25 m - marker # 68
at 285 well for 25 m - marker # 68
at 285 well for 25 m - marker # 68

help warm
lots of projections (flaps) stay
lots of projections (flaps) stay
lots of projections (flaps) stay

we went left to where we were
we went left to where we were
we went left to where we were

see the bed / dead mound
see the bed / dead mound
see the bed / dead mound

at ESP → Mark point, Pinking the yellow line w/

also next time pre pinks, an Niskin sampling

they were annoyed they don't know where the

old time they had to push the bottles (ie

swim (aim) into a warm clump ESP,

found ESP in good spot ~ 550,

shift on fly around ESP - things looked good

some debate about whether ESP is too

close to chimney H₂O

in a diffuse vent

ESP is a lot

plugged in - at 6:05 ish

opening drawer to flood ISMACS

6:29

counting pinks

6:05 - 4:00

sample bag & 200

to pull out ISMACS

4:54 ESP sample

at 1843

set last ISMACS down on what looks

like as close as we can

28:20

while waiting for ESP - suction over camp

lighter to leave ISMS off for the night

to save battery & time in the future

stayed up

the battery right near

floatant water

P.R. leaves battery (7:10 pm)

ISMACS didn't get placed into a flow

13

- 54



- 575

0

1. $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

(w)

$$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{x}} \right) = \frac{\partial L}{\partial x}$$

ISMS - vent fluid CH_4 , CO_2 , some sulfide
 RBCl #5 not much diff from (→
 -29 or 30

• IFC is a bit high - (sample mibidea?)
 • not B or really good
 • meth me or with sal
 • "background" sample

* where are we? 2 vents: 1 "new Gray calls (?)
 2nd south of Inferno?

• CTD at 2.5m
 • wand registering up to 29 or 30°C, 5m. fluctuations
 • ISIS: 20.57 dM sulfide in the flow (sampling)
 • in the water
 • at 12.31 measuring
 • pump on ISS 30 mH, then
 • depress to 8, then (-) then sulfated

• 20:02 ESP sucking fluid (this is a
 new sample in the tube warm site)
 • 20:09 ESP impinging from
 the switcher & stored (20:20)
 • 20:24 ESP sucking fluid (this is a
 new sample in the tube warm site)
 • 20:29 ESP impinging from
 the switcher & stored (20:30)

• 20:34 ESP sucking fluid (this is a
 new sample in the tube warm site)
 • 20:39 ESP impinging from
 the switcher & stored (20:40)

• deciding where to deploy collectors just near
 ESP hot at the way, just near
 deploying gillnets (st. 11) 20:47

• venting to 5 m in drawer,
 (unmanned phenix)
 • 21:05 of the mibidea
 (and the spot from
 the mibidea phenix)
 • 21:15 of the mibidea
 (and the spot from
 the mibidea phenix)
 • 21:20 of the mibidea
 (and the spot from
 the mibidea phenix)
 • 21:25 of the mibidea
 (and the spot from
 the mibidea phenix)
 • 21:30 of the mibidea
 (and the spot from
 the mibidea phenix)
 • 21:35 of the mibidea
 (and the spot from
 the mibidea phenix)
 • 21:40 of the mibidea
 (and the spot from
 the mibidea phenix)
 • 21:45 of the mibidea
 (and the spot from
 the mibidea phenix)
 • 21:50 of the mibidea
 (and the spot from
 the mibidea phenix)
 • 21:55 of the mibidea
 (and the spot from
 the mibidea phenix)
 • 22:00 of the mibidea
 (and the spot from
 the mibidea phenix)
 • 22:05 of the mibidea
 (and the spot from
 the mibidea phenix)
 • 22:10 of the mibidea
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 the mibidea phenix)
 • 22:15 of the mibidea
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 (and the spot from
 the mibidea phenix)
 • 24:00 of the mibidea
 (and the spot from
 the mibidea phenix)

Turn over controls to Dore

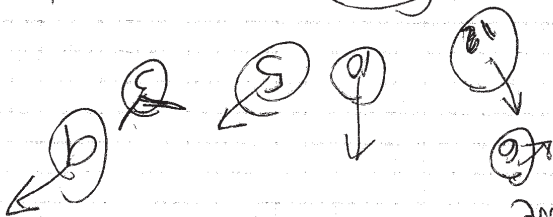
from Mashallow 302 in
 wants to go get #7
 divided tape keeps
 the street
 1.5 m/s
 debris
 occasional
 more
 out to a pillow margin (23:43)
 fish (milk) look like chimneys
 rather 1.3
 looking for pillow lava to
 collect 23:50

7:17 no dye yesterday (so no 24 hr
 white changing - lots
 at the changing - lots
 many impacts on outside & top
 especially I (2/7) probably good flow
 8:30 dealt w/ gilt samples (24 hrs mold
 returns to fish gilt, added 1 mL of PBS
 - yesterday (cat) cat's dealt w/ the
 samples
 Lat. / long. where 5.11 N to 2.00 E ESP
 150 008 209 W
 HC in dye yesterday - changing today is
 taking a long way to go)
 5/11

*Email Rhea

- asked on 11/10/08 give # ask for fat
 - ask for
 Monday
 packages in cold room
 pickup.

A hand-drawn diagram of a cell. It consists of an outer circle representing the cell membrane and an inner circle representing the nucleus. The inner circle is filled with diagonal hatching. A label 'cellum' is written above the outer circle with an arrow pointing to it. A label 'nucleus' is written below the inner circle with an arrow pointing to it.

[illegible]

4 pm - called it done bits on changing even though

Isaac #3 has lot of Backward mats on top mesh and on tubes itself
 Elmer's sulfur precipitate on ibutton case

getting 5 smts #4 ready for deployment
 - use same ibutton from #1
 - program to take sampling
 7/18/11 @ 8am
 (see #1)

Block prep for tomorrow

++

③ ② ①

↓
 surf: CH₂O (1.22)

BMH lot

DR 257

(batches) used

1536 #7 ora (2)
 1536 #8 ora (2)
 1536 #9 ora (2)

1536 #10 ora (2)
 1536 #11 ora (2)
 1536 #12 ora (2)

no obvious
 correct w/ 1 m/s at flow

sample of
 diffuse flow sub at
 marshmallow near (to Rd)

after taken section of
 bridge

10:37 T reading in Shiner stuff to color off

T up to 9.8°C

48 - collected another yellowish
solid from S. side of
marsh, left at home.
into bottle #4 - lost 2 by cracks
fitting to dump me - lost 2 by cracks
to get rid of risk in bed 15 mins, but too

Codes for 15 mcs samples

Zr = zirconia beads
 An = anhydrite
 Sp = sphalerite
 Hg = hematite
 Mg = malachite
 Py = pyrite

Line #6

Schumb in tubes

Getting 15 mcs ready for final deployment (7:38 pm)
 - 1 bottoms - start in 12 mcs, sample every 90 min

Buttes
 6 - Chunks of sulf. from base of Marshmellow
 1 - Sulf. from Esparea
 2 - Tubeworms from Esparea → sulf. H₂O
 3 - Sulf. from Esparea (R.M. 1049)

Bottom
 1874 BT → 11
 1873 BT → 11

V. skin H₂O

#7: 7.652

#8: 7.513

#5: 7.584

#/w Tape 15:35
page #2 15:35m
dumping slides into
bucket #2 (sub'dic H₂O)
[slide from flange structure near EST]

[illegible]

H_2O self-polymerization

Call # 9400
q 4720
455.944 J
N T8281 N
130° 0.8281
Pch'ing (RM #1961) as #2 on
2 miles NW of cloud

[illegible]

[The page contains dense, mirrored handwriting from bleed-through, which is illegible.]

6024

cat/long ESQ wght / tide wght
 55.99g 130
 56.00g 130
 0.8171 W

Water Sampling Geochem

ICPMS - metals: 10 mL → 1 mL HCl (extraction)
 not sure if trace metal for (2 blanks)

DIC - ^{acidified} 10 mL ~~seal~~ → syring vial 1 mL NaOH seal

DOC - 0.2 µm filter, 15 mL into plastic scint vials
 blank DI

TOC - ^{not filter} 15 mL plastic scint vial → freeze

isotope (filter → plastic HDPE → freeze (DAMP)
 solid 10 mL → 1 mL exchanger
 pH measure w/ electrode

bulk sample: 2 x 15 mL in scint vial, freeze
 bulk filter → same but w/ filters

Waters (7/19) pH

7/20/11

ESQ sample from yeast

pH 7.208

#5: 7.628

#6: 6.587

#7: 6.249

#8: 7.327

7/20/11

Waters ESQ
 pH 7.542

(JUNE)

we sample N 5 km 5+6

45° 57.1944 N - 130° 2.6874 W D 1443 m

2452000

728
N 5 km

45° 57.9665 N - 130° 3.3400 W Depth 1468 m

1810 GMT

background Caldera N 5 km sample

7120