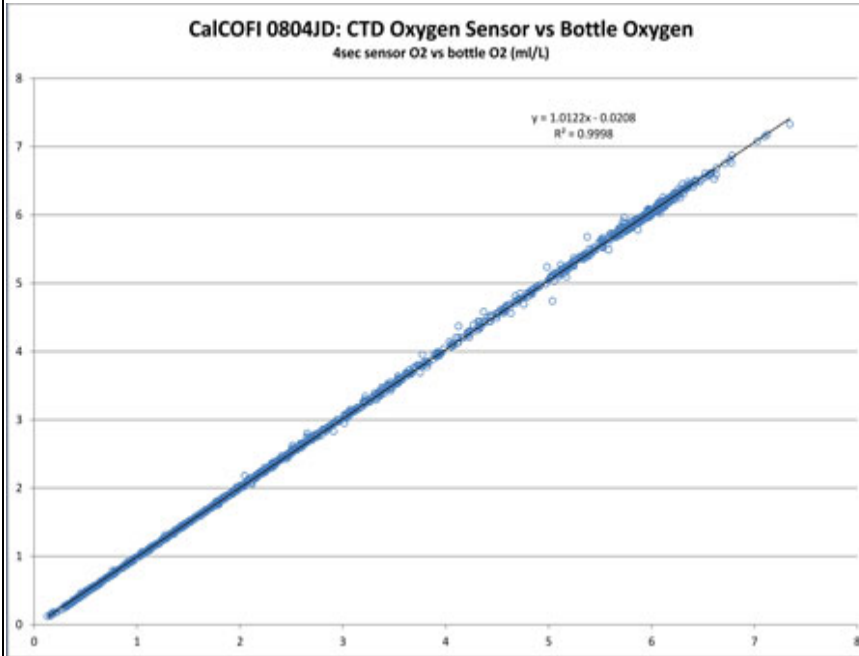
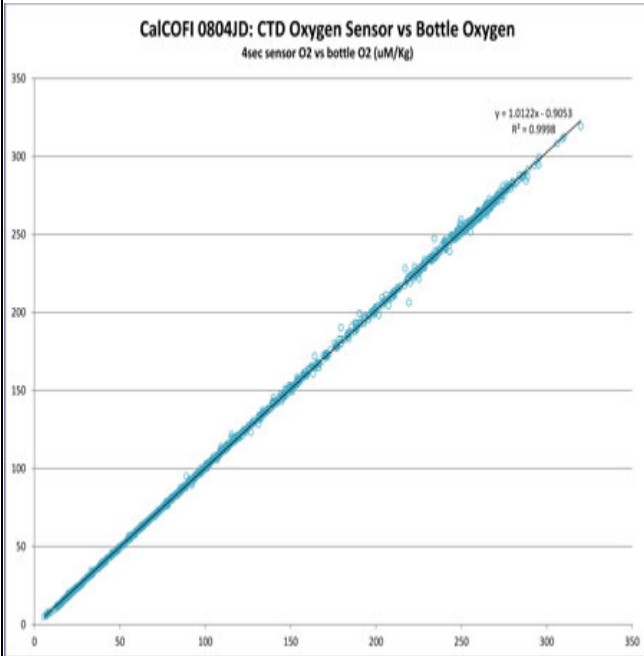


0804JD CTD Processing Summary

Parent Category: 2008 Cruises (/cruises/older-cruises/2008.html)

Category: CalCOFI 0804JD (/cruises/older-cruises/2008/230-calcofi-0804jd.html)

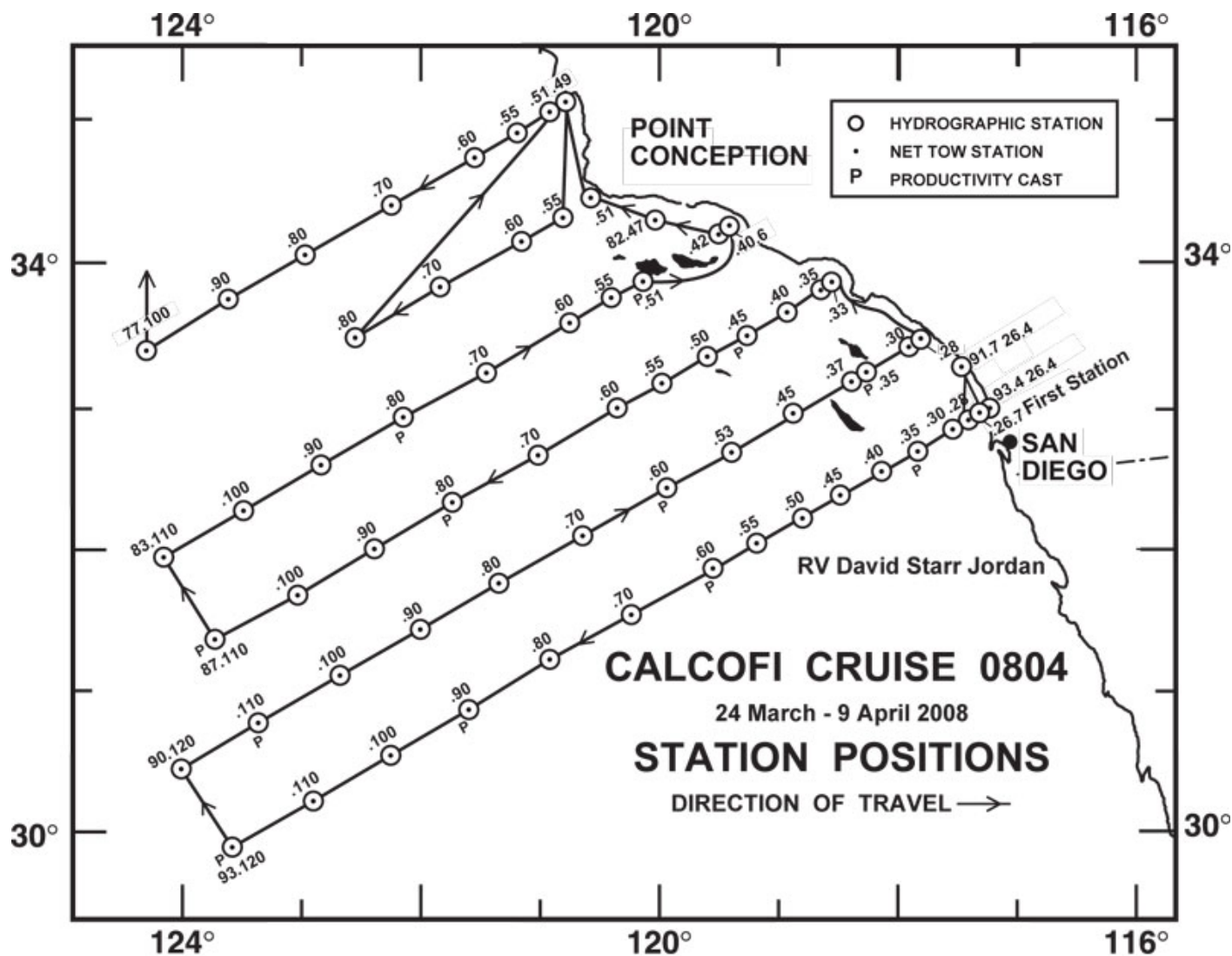
Last Updated: 11 September 2018

CTD Processing Summary CalCOFI 0804JD CTD Final Data (reprocessed/reformatted 08/2018)		
Download 0804JD CTD raw cast files zipped (http://cappuccino.ucsd.edu/downloads/2008/20-0804JD_CTDCast.zip)		Download 0804JD FinalQC CTD + bottle data (http://cappuccino.ucsd.edu/downloads/2008/20-0804JD_CTDFinalQC.zip)
General CTD Notes - data acquisition cast notes, logistics, processing notes are listed below		
CTD sensor corrections derived by comparing 4 secs of CTD sensor data (prior to bottle closure) to bottle samples		
Dual T & S	Primary Sensor	Secondary Sensor
Temperature, dual SBE3	No offset or correction	No offset or correction
Salinity offset (bottle - CTD salinity; > 350m only; Seabird SBE4; fliers excluded)	-0.0016	0.0025
Single sensors - note only one CTD O2 sensor	ml/L	uM/Kg
Oxygen (ml/L & uM/Kg; single Seabird SBE43)	$y = 1.0122x - 0.0208$ $R^2 = 0.9998$	$y = 1.0122x - 0.9053$ $R^2 = 0.9998$
Nitrate - Satlantic MBARI-ISUS (SN 111)	$y = 30.718x - 6.9314$ $R^2 = 0.9908$	
Seapoint Fluorometer - linear & polynomial regressions	$y = 4.9751x - 0.259$ $R^2 = 0.6513$	$y = 3.4204x^2 + 1.9413x + 0.0311$ $R^2 = 0.7366$
		
(http://cappuccino.ucsd.edu/downloads/2008/0804JD/0804JD_Ox1MLvsOxBML.jpg)		(http://cappuccino.ucsd.edu/downloads/2008/0804JD/0804JD_Ox1UMvsOxBUM.jpg)

(http://cappuccino.ucsd.edu/downloads/2008/0804JD/0804JD_ISUSVsNO3.jpg)

(http://cappuccino.ucsd.edu/downloads/2008/0804JD/0804JD_FIVvsChla.jpg)

General notes: Station Pattern & Cruise Track



Leg 1: CalCOFI 0804JD • 24 Mar - 9 Apr 2008 • NOAA RV David Starr Jordan • San Diego to San Diego
Leg 2: DEPM 0804JD • ~~11 Apr~~ 23 Apr - 1 May 2008 • NOAA RV David Starr Jordan • San Diego to San Francisco

- Leg 1 : Departed San Diego on NOAA R/V David Starr Jordan 0800 24 Mar 2008. Returned to San Diego 9 Apr 2008. Sixty-six standard and 9 SCCOOS stations were scheduled for Leg 1.
- Leg 2 : Departed San Diego on NOAA R/V David Starr Jordan 0800 11 Apr 2008. Returned to San Diego 1 May 2008. Trawling and CUFES surveying to Pt Conception then CUFES and station work northward to Line 60 (San Francisco).
- Number of participants: Leg 1: 14 scientists, technicians & volunteers; Leg 2: 10 scientists, technicians

CTD data from both Legs are included here since Leg 2 continued to use Leg 1's CTD-rosette. It should be noted that fewer analytical samples were collected on Leg 2 due to the reduction of at-sea analytical personnel. Also there was a significant delay between Legs 1 & 2 not scheduled.

Cruise and CTD Data Processing Notes

CalCOFI 0804JD on NOAA RV David Starr Jordan successfully occupied 59 of 75 scheduled stations on Leg 1. Rough Spring weather delayed station work badly so only 59 stations were occupied Leg 1. Leg 2 tried to pick up some of the stations lost on Leg 1 during their transit to Line 73.3. Leg 2 continued the station pattern north of Line 76.7 primarily trawling and CUFESing (fish egg survey), stopping on stations for quick CTD profiling. Please note that the CTD cast numbering of Leg 2 may not be consecutive since "order occupied" numbering increments for any trawl or net tow, regardless of CTD ops.

CTD Casts on Leg 1: 001 - 059; Leg 2: 150 - 177 (non-consecutive)

Seabird 911+ configuration (#26277):

Primary Temperature (#1324), Conductivity (#042206), and O2 sensor (#430090), pumped (#2236); Secondary Temperature (#1049), Conductivity (#722) pumped (#68); Wetlabs CStar (CST-810DR) 25cm transmissometer (mislabelled Chelsea/Seatech in con); Seapoint chlorophyll fluorometer (SCF2483 @10x); Benthos/Datasonics Altimeter (#7601); MBARI-ISUS v2 (#111); remote PAR (#4544), no surface PAR was installed. (Freq0=T0; Freq1=C0; Freq2=Pr; Freq3=T1; Freq4=C1; V0=Trans; V1=Fl; V2=ISUS; V3=open; V4=O21; V5=open; V6=Alt; V7-PAR)

Note: continual problems with consistently powering the ISUS resulted in a new protocol after these early cruises where we swapped batteries every third cast. If the ISUS was not unplugged post-cast right away, the battery would not last 3 casts. Starting in 2009, the ISUS battery was charged after every cast without removing it from the rosette. A long charging cable was rigged so it was not necessary to swap the heavy batteries. Occasional venting of charging gases were necessary by unplugging the battery case at least once a day.

Voltage	Sensor
V0	Trans
V1	Fluor
V2	ISUS
V3	
V4	O2
V5	
V6	ALT
V7	PAR

CalCOFI 0804JD CTD Data Processing & Console Ops Notes

Removed salt fliers on both primary & secondary comparisons.

No deep CTD casts (>515m) were performed on Leg 1 but 1000m casts were performed on Leg 2 on MBARI Line 67 (66.7) stations.

Only one O2 sensor was deployed, no ISUS, no Surface PAR, no pH. These were purchased in mid-2009 and first deployed on CalCOFI 0907M2 when a new 911+ system was bought.

V2 Deck unit was also purchased at that time so this cruise was on V1 Deck Unit - requiring Align-CTD offset of secondary conductivity (0.073sec).

Original hdr file on cast 001 & 002 require correction - normal fields were not setup before the 1st cast since a new version of Seasave was installed. It was fixed on cast 003. Casts 001 & 002 hdr files were edited during processing - note the .hex binary file has not been corrected on casts 001 & 002.

CalCOFI 0804JD CTD Cast & Data Processing Notes

The first station was after 1800PST because of acoustics calibration at the start of the cruise. No prodo station on day 1.

Cast 001 sta 93.3 26.7: hdr fields created post-cast since form was not setup in the new version of Seasave (v7). ISUS operational but very noisy-spikey on downcast 0-15m.

Cast 002 SCCOOS sta 93.4 26.4: hdr field created but station was entered into cast field, corrected post-cast. Not corrected in the .hex file.

Cast 003 SCCOOS sta 91.7 26.4: hdr file format working now, ISUS working fine

Cast 004 sta 93.3 28.0: buoy on station, had to move off station, short delay; ISUS working fine

Cast 005 sta 93.3 30.0: chl max 32m; ISUS working

Cast 006 sta 93.3 35: prodo station, ISUS looks good

Cast 007 sta 93.3 40.0: some noise-spikes on downcast profiles but processed data look fine/smooth

Cast 008 sta 93.3 45.0: salinity spikes noted from 0-5m on downcast (pumps catch air?); bottle #18 spring loop snapped, replaced with bottle #24 temporarily - then a large crack in bottle #24 was noticed (not used yet this cruise). Replaced from spare bottle pool. mrk #17 missed, hand-edited post-cast.

Cast 009 sta 93.3 50.0: Wind 20kts, moon @3/4; 40m chl max

Cast 010 sta 93.3 55.0: winds 20-23kts, seas picking up a bit; down at 30m/min then 48m/min; 30m chl max

Cast 011 sta 93.3 60.0: prodo station

Cast 012 sta 93.3 70.0: downcast profiles have some noise, not sure about the cause, response looks alright

Cast 013 sta 93.3 80.0: cold night, moderate seas, down at 30 then 40 eventually 45m/min; new ISUS battery installed pre-cast but ISUS went to zero ~15-30m on downcast

Cast 014 sta 93.3 90.0: prodo station, ISUS looks fine this cast, no dropouts

Cast 015 sta 93.3 100.0: chl max 100m, ISUS good, nothing else noted

Cast 016 sta 93.3 110.0: chl max 80m, double mrk at #9, edited post-cast; ISUS okay

Cast 017 sta 93.3 120.0: early prodo station; winch operator Vlad reset wire count accidentally between 31-21m, had to go back down to 21m; ISUS good

Cast 018 sta 90.0 120.0: bottom contact alarm sounded off @30m on downcast - erroneous most likely or something big swam by; forgot to trip the surface bottle so it was put back into the ocean for bottle #20 (2m).

Cast 019 sta 90.0 110.0: altimeter still acting up, causing bottom contact alarm to sound; serviced the altimeter and fluorometer Y-cable post-cast; new ISUS battery installed post-cast; ISUS profile good; chl max 91m

Cast 020 sta 90.0 100.0: early prodo cast; CTD yo-yo'd @325m by winch operator Vlad; ISUS good

Cast 021 sta 90.0 90.0: nothing noted, ISUS looks good

Cast 022 sta 90.0 80.0: chl max 60m; point-checking note - "no 140m bottle trip, both bottle tripped at 125m - two 125m markers", not a mistrip but a missed-trip, not noted on console ops by operator; ISUS good

Cast 023 sta 90.0 70.0: 28kt winds - seas picking up again; deck test pre-cast; LTER cardinal sta; cold night, some rolls; wire angle high from 515 to 200m upcast; modem error message from carousel ~440m upcast; CTD yo-yo a couple time to

get target depths

Cast 024 sta 90.0 60.0: prodo station; serious (~40m extra) wire angle

Cast 025 sta 90.0 53.0: mislabeled cast 024 initially, fixed post-cast in all files; ISUS data "stair-stepping" & spikey - low battery

Cast 026 sta 90.0 45.0: new ISUS battery installed pre-cast, ISUS looks good

Cast 027 sta 90.0 37.0: sunrise station, dolphins spotted; chl max 20m mixed layer 20m; deck tested

Cast 028 sta 90.0 35.0: prodo station

Cast 029 sta 90.0 30.0: nothing noted

Cast 030 sta 90.0 28.0: 62m bottom, cast to 55m - altimeter read 10m from bottom; bottle #4 leaking slightly from bottom cap

Cast 031 sta 86.7 33.0: 54m bottom, cast to 50m, altimeter 6.8m

Cast 032 sta 86.7 35.0: spikey chl & transmissometer profiles - particulates?; ISUS battery changed post-cast; transmissometer cable serviced post-cast

Cast 033 sta 86.7 40.0: Santa Monica Basin station; fresh ISUS battery; cast to 787m, 9m off bottom

Cast 034 sta 86.7 45.0: 23-bottle prodo cast

Cast 035 sta 86.7 50.0: San Nicolas Island station, shallow 76m bottom, cast to 70m, 8.3 on altimeter

Cast 036 sta 86.7 55.0: chl max 22m; nothing noted, ISUS good

Cast 037 sta 86.7 60.0: chl max 25m, nothing noted, ISUS good

Cast 038 sta 86.7 70.0: calm, cold night; ISUS good, battery changed post-cast; chl max 40m, mixed layer 50m; deck test pre-cast

Cast 039 sta 86.7 80.0: 22 bottle prodo cast to 515m; ISUS good

Cast 040 sta 86.7 90.0: chl max 45m, mixed layer 55m; nothing else noted

Cast 041 sta 86.7 100.0: 22 bottle cast to 515m, extra chl max bottle for LTER; chl max 71m; calm night; ISUS good

Cast 042 sta 86.7 110.0: 24 bottle prodo cast (2 test cases tripped); no ISUS data collected(?), nothing noted

Cast 043 sta 83.3 110.0: super calm seas, man overboard drill prior to station; ISUS back & good

Cast 044 sta 83.3 100.0: replaced ISUS battery before cast but no data collected (???)

Cast 045 sta 83.3 90.0: ISUS working this cast; unusual salinity and other profiles between 50-150m; chl max 36m, mixed layer 11m

Cast 046 sta 83.3 80.0: 22 bottle prodo cast to 515m; ISUS working

Cast 047 sta 83.3 70.0: chl max 45m, mixed layer depth 20m; ISUS working

Cast 048 sta 83.3 60.0: rough weather, CTD prepped on station, winds 35+kts but not rolling bad yet; cold night; high surface NO3; extra bottle closed at 70m (#13-14); ISUS good

Cast 049 sta 83.3 55.0: rough marginal conditions, 38+kt winds, surface cold & high NO3, steep O2 gradient; chl max 0-30m, mixed layer 50m; ISUS working

Cast 050 sta 83.3 51.0: shallow 13 bottle prodo station, bottom 108m, cast to 100m; ISUS good

Cast 051 sta 83.3 42.0: shallow 130m bottom, 12 bottle cast to 116m; visibly green, chl max 5m, 10m mixed layer; ISUS working

Cast 052 sta 83.3 40.6: 33m bottom, 6 bottle cast to 26m; LTER asked for a 10m bottle after arriving to surface so CTD was sent back to 10m bottle #6; chl max 15m

Cast 053 sta 81.8 46.9: Santa Barbara Basin station, 24 bottle cast to 574m, ~7m off bottom; very shallow mixed layer ~8m; steep O2 gradient 10-20m along with NO3; salts >34 PSU by 20m; ISUS working

Cast 054 sta 80.0 51.0: Pt Conception Station, 76m bottom, 9 bottle cast to 71m; chl max 6m

Cast 055 sta 76.7 49.0: headed north to Line 77 after 80.51; no prodo today, Bryan taken ashore at Avila Beach for minor medical problem; shallow 65m station, 8 bottle cast to 60m

Cast 056 sta 80.0 55.0: back to line 80; no Knudsen bottom depth but ~780m so no worries about hitting bottom; cold night, moderate seas; surface temp still cold (~10.7) with high NO3; ISUS worked on downcast and most of upcast (bad from ~130-0m); chl max 25m, mixed layer to 30m

Cast 057 sta 80.0 60.0: getting rough again, 30-40kt winds, cold sunrise; ISUS not working although pre-cast battery voltage was 12.6v; bottle #13 tripped but did not close; chl max 0-50m, mixed layer to 50m

Cast 058 sta 80.0 70.0: ISUS not working, partial pieces so data column needs to be flagged - done in processed CTD.csv
Cast 059 sta 80.0 80.0 (21:00 07 Apr 2008): fluorometer was pegged @ 0m before cast, restarting Seasave and all was well (?); bottle #13 did not trip; RTL's last CalCOFI cast; ISUS working

Leg 2: ISUS removed; most SIO personnel not onboard, only "trooper" JLW; please note cast number 150-177

Cast 150 sta 76.7 51.0 (12:38 23 Apr 2008): starting on Line 77 inshore, picking up stations missed Leg 1 due to very bad weather which caused the long Leg 2 delay; ~232m bottom, 15 bottle cast to 227m

Cast 151 sta 76.7 55.0: double chl peak noted, nothing else; no ISUS; 20 bottle cast to 515m

Cast 152 sta 76.7 60.0: bottle #8 did not close; 20 bottle cast to 515m

Cast 153 sta 76.7 70.0: secondary chl peak @90m; bottle #8 not closed again; cast mislabeled 152 instead of 153, fixed post-cast by AEH; 20 bottle cast to 515m

Cast 154 sta 76.7 80.0: 21 bottle cast to 515m, extra bottle closed @170m since #8's been mistripping

note cast numbering on Leg 2 is not consecutive due to NOAA's order occupied including trawl & net tow stations

Cast 160 sta 76.7 90.0: 21 bottle cast to 515m, extra bottle closed @170m since #8's been mistripping; broke end caps off #8 while retrieving

Cast 161 sta 76.7 100.0: 21 bottle cast to 515m, extra bottle closed @170m since #8's not working; deck unit alarm sounding at 100m to surface on upcast; no Knudsen bottom depth, not working this cast

northern Lines, changing to 12 bottle rosette sampling (1, 3, 5,... table-driven)

Cast 162 sta 73.3 90.0: accidentally tripped a bottle at 70m instead of 60m, skipped 60m

Cast 164 sta 73.3 80.0: chl max 18m, mixed layer to 43m

Cast 165 sta 73.3 70.0: Temp, O2 inversion @35-40m, also seen on transmissometer, not seen on salts

Cast 166 sta 73.3 60.0: double chl peaks again, 3 O2 inversions

Cast 167 sta 73.3 55.0: chl max 5m, 22m mixed layer

Cast 168 sta 70.0 55.0: secondary chl max @39m, 1st @18m, 20m mixed layer

Cast 169 sta 70.0 60.0: 12 bottle cast to 515m, nothing noted

Note: starting MBARI SECRET Line 67 1000m stations, every 20nm ie 66.7 60.0, 65.0, 70.0, 75.0, 80.0, 85.0, 90.0

Cast 170 sta 66.7 50.0: moved ~4nm west to get 1000m bottom for MBARI CTD casts - ~sta 66.7 51.0; 12 bottle cast to 1037m

Cast 172 sta 66.7 55.0: 12 bottle cast to 1023m; chl max 36m, mixed layer 38m

Cast 173 sta 66.7 60.0: 12 bottle cast to 1014m; chl max 20m, 40m mixed layer

Cast 174 sta 66.7 65.0: 12 bottle cast to 1033m; chl max 25m, 20m mixed layer

Cast 175 sta 66.7 70.0: 12 bottle cast to 1035m; O2 @200m looks a little crazy (checked out in point-checking post-cruise), temp & transmissometer look unaffected

Cast 176 sta 66.7 75.0: 12 bottle cast to 1032m; same O2 feature between 200-300m as last stn

Cast 177 sta 66.7 80.0: 12 bottle cast to 1028m; rough seas, salinity inversion @50m, O2 inversion @200m again, Temp inversion @50m too

JRW 09/07/2018