0711NH CTD Processing Summary

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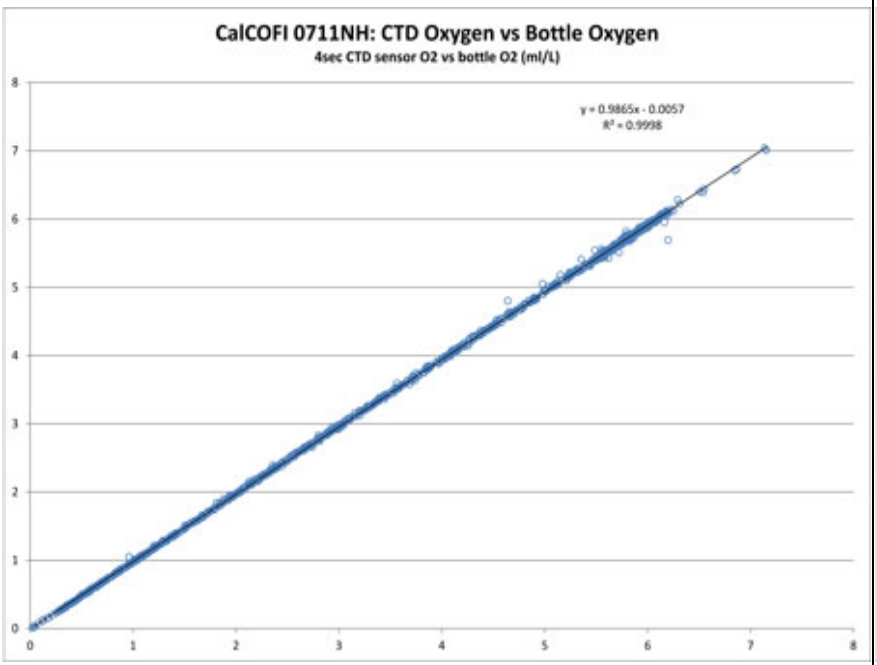
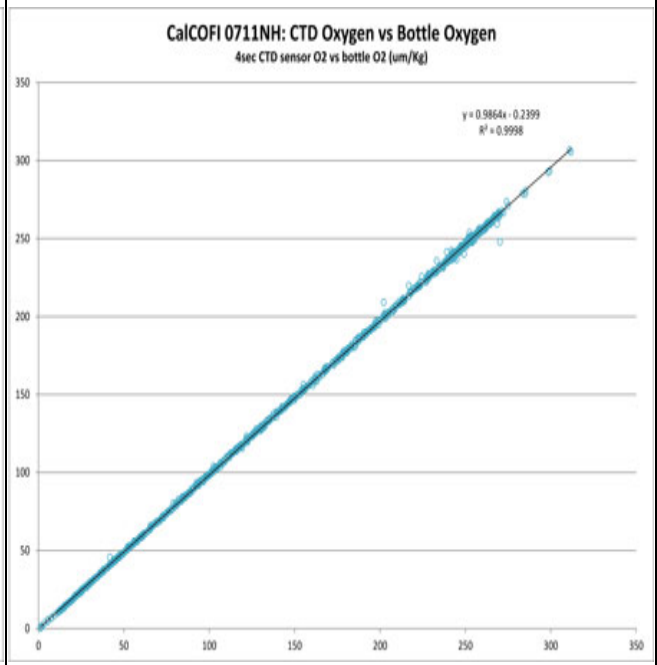
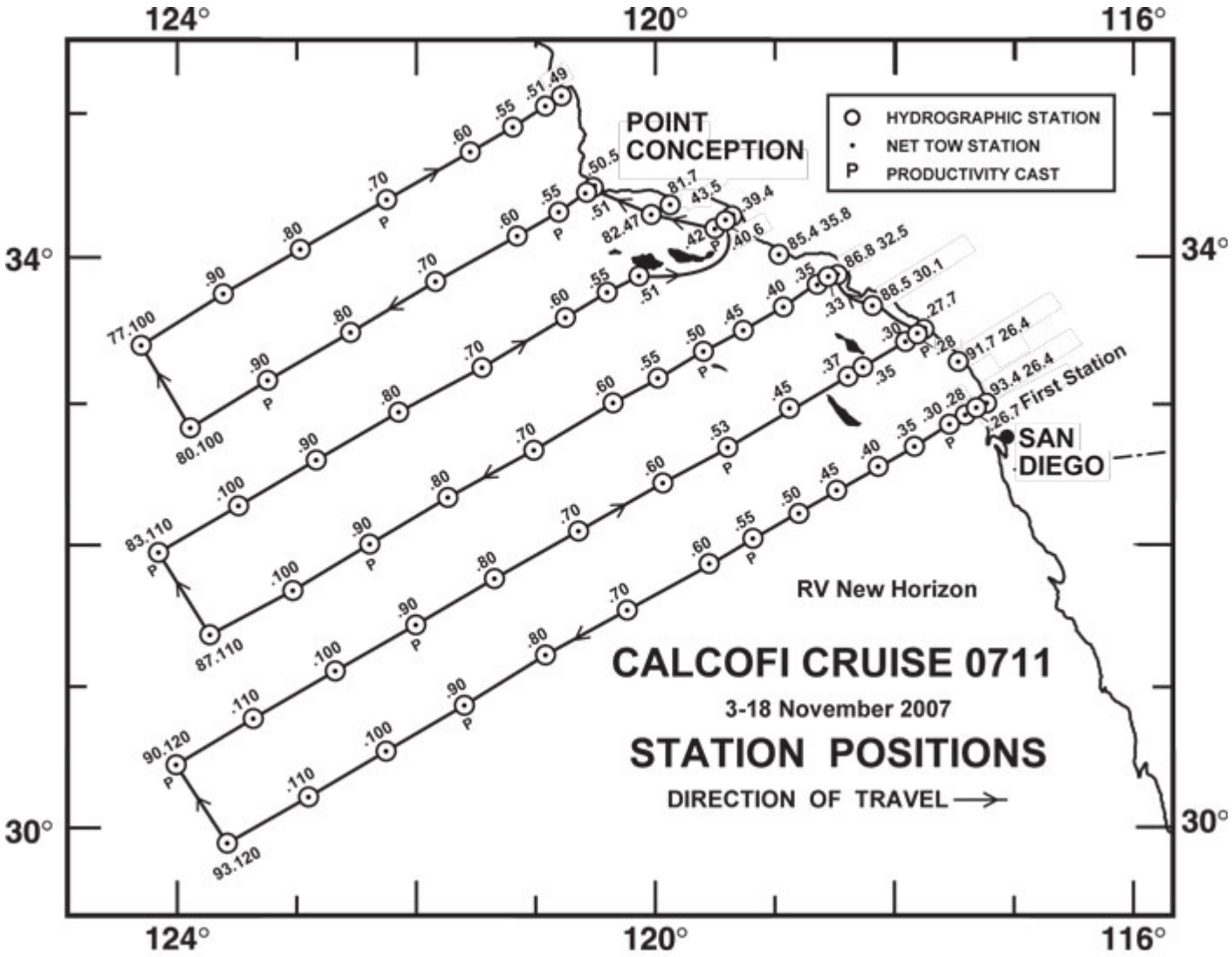
Last Updated: 20 September 2018

CTD Processing Summary CalCOFI 0711NH CTD Final Data (reprocessed/reformatted 08/2018)		
Download 0711NH CTD raw cast files zipped (http://cappuccino.ucsd.edu/downloads/2007/20-0711NH_CTDCast.zip)		Download 0711NH FinalQC CTD + bottle data (http://cappuccino.ucsd.edu/downloads/2007/20-0711NH_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)	-0.0001	0.0004
Single sensors - note only one CTD O2 sensor	ml/L	uM/Kg
Oxygen (ml/L & uM/Kg; single Seabird SBE43)	y = 0.9865x - 0.0057 R² = 0.9998	y = 0.9864x - 0.2399 R² = 0.9998
Nitrate - Satlantic MBARI-ISUS (SN#111 v2)	y = 30.6x - 7.7116 R² = 0.9855	
Seapoint Fluorometer - linear & polynomial regressions	y = 3.841x - 0.1015 R² = 0.7137	y = 1.5823x2 + 3.0722x - 0.057 R² = 0.7226
 (http://cappuccino.ucsd.edu/downloads/2007/0711NH/0711NH_Ox1MLvsOxBML.jpg)		 (http://cappuccino.ucsd.edu/downloads/2007/0711NH/0711NH_Ox1UMvsOxBUM.jpg)

(http://cappuccino.ucsd.edu/downloads/2007/0711NH/0711NH_ISUSVvsNO3.jpg)	(http://cappuccino.ucsd.edu/downloads/2007/0711NH/0711NH_FlVvsChla.jpg)

General notes: Station Pattern & Cruise Track



CalCOFI 0711NH • 02 - 14 Nov 2007 • SIO RV New Horizon • San Diego to San Diego

Cruise and CTD Data Processing Notes

CalCOFI 0711NH on SIO RV New Horizon successfully occupied 67 of 75 scheduled stations. Three standard stations (80.0 100, 76.7 100.0, 76.7 49.0) & five SCCOOS stations (91.7 26.4, 86.8 32.5, 85.4 35.8, 81.7 43.5, 80.0 50.5), were missed. Acoustic calbration was performed in San Diego Bay Nov 2nd so arrival to the 1st CalCOFI station was ~2300PST Nov 2nd.

Seabird 911+ configuration:
Primary Temperature (#1049), Conductivity (#0722), and O2 sensor (#1075), pumped (#55060); Secondary Temperature (#031324), Conductivity (#2206) pumped (#52236); Wetlabs (CST-490DR) 25cm transmissometer (mislabeled Chelsea/Seatech in con); Seapoint chlorophyll fluorometer (SCF2483 @10x); Benthos/Datasonics Altimeter (#46604); MBARI-ISUS v2 (#111); remote PAR (#4544), RV New Horizon surface PAR was connected.
(Freq0=T0; Freq1=C0; Freq2=Pr; Freq3=T1; Freq4=C1; V0=Trans; V1=Fl; V2=ISUS; V3=open; V4=O21; V5=open; V6=Altimeter; V7-Remote PAR)

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

CalCOFI 0711NH CTD Data Processing & Console Ops Notes

Removed salt fliers on both primary & secondary comparisons.

No deep CTD casts (>800m) were performed this cruise

Only one O2 sensor was deployed and a SBE11v1 Deck Unit - requiring Align-CTD offset of secondary conductivity (0.073sec) was used.

There were problems with the primary sensor array that took five casts to troubleshoot. Turns out the sensors were fine but there were problems with the cables. Solution was finally replacing both sets of T, C cables & the pump Y-cable. It is recommended to use the bottle sample data vs the CTD sensor data. Data quality codes have been added to these casts.

Cast and Console Ops Notes:

Cast 001 sta 93.3 26.7: 9 bottle cast to 75m, 82m bottom; chl max ~18m; primary sensor profiles were extremely noisy so a second cast (001b) was performed without closing bottles. Other problems - there was a hydralic leak that delayed the cast ~20mins; GPS feed to deck unit displaying longitude as "E" instead of "W"
Cast 001B sta 93.3 26.7: recast CTD profiles without stopping for bottles since the sensors were not working properly - same problem, no improvement.
Cast 002 SCCOOS sta 93.4 26.4: 4 bottle cast to 15m; 22m bottom; salinity profile noisy; GPS still flakey
Cast 003 sta 93.3 28.0: 21-bottle cast to 515m; 0-150m T, S, & O2 profiles bad on downcast; GPS still flakey
Cast 004 sta 93.3 30.0: 22-bottle prodo cast to 515m; chl max 28m, 21m secchi; 0-150m T, S, & O2 profiles bad on downcast; GPS still flakey
Cast 005 sta 93.3 35.0: 21-bottle cast to 515m; chl max 16m, secchi 11m; Primary T & C sensors changed but coefficients were not edited, secondary sensor data recorded on console ops but secondary salinity was off; GPS still flakey
Cast 006 sta 93.3 40.0: 21-bottle cast to 515m; chl max 30m; 30m/min to 100m, 50m/min to 300m, 55m/min to 515m; replaced T1, C1, T2, C2, pump y-cable and 2nd pump. Data finally looks good but GPS still displaying E.
Cast 007 sta 93.3 45.0: 20-bottle cast to 515m; new ISUS battery installed orecast; chl max 32m
Cast 008 sta 93.3 50.0: 21-bottle cast to 515m; all sensors working properly
Cast 009 sta 93.3 55.0: 22-bottle prodo cast to 515m; 35m chl max, 12m mixed layer, 27m secchi depth; very calm w/ long period swell
Cast 010 sta 93.3 60.0: 20-bottle cast to 515m; large rolls at start of upcast & first bottle trips, ship repositioned to 380deg; 38m chl max
Cast 011 sta 93.3 70.0: 20-bottle prodo cast to 515m; 20m chl max
Cast 012 sta 93.3 80.0: 21-bottle cast to 515m; 50m chl max
Cast 013 sta 93.3 90.0: 24-bottle prodo cast to 515m; chl max 58m
Cast 014 sta 93.3 100.0: 20-bottle cast to 515m; 45m chl max, 40m mixed layer; large rolls; DI flushing tubes attached to pump left on so there may be a slight pressure influence
Cast 015 sta 93.3 110.0: 22-bottle cast to 515m; 54m chl max; O2 feature @250m
Cast 016 sta 93.3 120.0: 20-bottle cast to 515m
Cast 017 sta 90.0 120.0: 24-bottle prodo cast to 515m; chl max 48m; 21m secchi; moderate sea state
Cast 018 sta 90.0 110.0: 21-bottle cast to 515m; chl max 32m; -0.1 pressure coefficient offset added (3.5 > 3.6)
Cast 019 sta 90.0 100.0: 21-bottle cast to 515m; suspected deck unit was causing the GPS problem (001-018), swapping deck units fixed the problem 100%
Cast 020 sta 90.0 90.0: 23-bottle prodo cast to 515m; 18m secchi; secondary temperature suspect, disagrees with primary by 1degC and primary agrees with MET at surface
Cast 021 sta 90.0 80.0: 21-bottle prodo cast to 515m; mislabeled 90.0 90.0 on console ops - files look ok; calm & sunny; T2 & C2 sensors seem to be working fine so last cast T2, C2, O2 may have been bio-fouled
Cast 022 sta 90.0 70.0: 22-bottle cast to 515m; 23m chl max
Cast 023 sta 90.0 60.0: 21-bottle cast to 515m
Cast 024 sta 90.0 53.0: 24-bottle prodo cast to 515m; 8m secchi

Cast 025 sta 90.0 45.0: 21-bottle cast to 515m; 18m chl max
Cast 026 sta 90.0 37.0: 20-bottle cast to 515m; chl max 0-27m, mixed layer 27m
Cast 027 sta 90.0 35.0: 18-bottle cast to 300m; bottom 309m
Cast 028 sta 90.0 30.0: 20-bottle cast to 515m
Cast 029 sta 90.0 28.0: 13-bottle prodo cast to 85m; 104m bottom; bottle #4 mistripped, went back down to get 50m bottle (#13); bead of bottle lanyard #4 got caught on CTD wire
Cast 030 SCCOOS sta 90.0 27.7: 5 bottle cast to 19m, 24m bottom
Cast 031 SCCOOS sta 88.5 30.1: 4-bottle cast to 15m; 21m bottom; lots of surface chop
Cast 032 sta 86.7 33.0: 8-bottle cast to 50m, altimeter 6.2m, bottom 58.6m; chl max 10m
Cast 033 sta 86.7 35.0: 21-bottle cast to 515m; 18m chl max, 10m mixed layer
Cast 034 sta 86.7 40.0: Santa Monica Basin station; 24-bottle cast to 755m; bottom changing from 767 to 761m; altimeter read 7m from bottom at depth
Cast 035 sta 86.7 45.0: 21-bottle cast to 515m
Cast 036 sta 86.7 50.0: San Nicolas Island station, shallow 78m bottom, 11-bottle prodo cast to 68m; ISUS not plugged in, no data, plug check post-cast & looked ok
Cast 037 sta 86.7 55.0: 21 bottle cast to 515m; 12m chl max; extra marker @440m, edited out post-cast
Cast 038 sta 86.7 60.0: 21-bottle cast to 515m; pr offset changed from 3.65 to 3.60
Cast 039 sta 86.7 70.0: 21 bottle cast to 515m; 18m chl max
Cast 040 sta 86.7 80.0: 21-bottle cast to 515m; ISUS battery changed post-cast
Cast 041 sta 86.7 90.0: 23-bottle prodo cast to 515m; 11m secchi
Cast 042 sta 86.7 100.0: 21-bottle cast to 515m; chl max 35m; moderate seas
Cast 043 sta 86.7 110.0: 21-bottle cast to 515m; chl max 56m, 40m mixed layer; heavy seas, going down 30m/min then 36m/min to depth
Cast 044 sta 83.3 110.0: 23-bottle prodo cast to 515m; 79m chl max, 29m secchi; hot outside with good swell; ISUS dropped out at depth, battery swapped post-cast
Cast 045 sta 83.3 100.0: 22-bottle cast to 515m; 80m chl max, 45m mixed layer; rough conditions, large swell & high winds; downcast & upcast salinity noticably different
Cast 046 sta 83.3 90.0: 21-bottle cast to 515m; chl max 45m, mixed layer 28m; rough, windy, cold night; down slow at 30m/min then 40m/min
Cast 047 sta 83.3 80.0: 21-bottle cast to 515m but surface bottle not tripped, no seawater samples
Cast 048 sta 83.3 70.0: 21-bottle cast to 515m; no prodo today "short on time"; 39m chl max; ISUS misbehaving @depth, dropped out @450m, battery cable suspect since new battery
Cast 049 sta 83.3 60.0: 21-bottle cast to 515m; chl max 0-30m, 30m mixed layer; ISUS working; rough, windy, cold night
Cast 050 sta 83.3 55.0: 21-bottle cast to 515m
Cast 051 sta 83.3 51.0: 11-bottle cast to 90m, 98m bottom
Cast 052 sta 83.3 42.0: 13-bottle prodo cast to 120m; 133m bottom; chl max 10m, 11m secchi; flat calm beautiful day; ISUS dropouts again even though battery was changed before the cast & cables were cleaned
Cast 053 sta 83.3 40.6: 6-bottle cast to 30m; 34m bottom; chl max 10m; late station due to medical emergency/evacuation of person
Cast 054 sta SCCOOS 83.3 39.4: 5-bottle cast to 15m, 21m bottom; red tide, chl max 10m
Cast 055 sta 81.8 46.9: Santa Barbara Basin, 24-bottle cast to 574m; all sensors operational entire cast
Cast 056 sta 80.0 51.0: 9-bottle cast to 65m; 75m bottom
Cast 057 sta 80.0 55.0: 22-bottle prodo cast to 515m; chl max 30m, secchi 16m; JRW 50th bday
Cast 058 sta 80.0 60.0: 21-bottle cast to 515m; 33m chl max; moderate seas
Cast 059 sta 80.0 70.0: 20-bottle cast to 515m; 40m chl max, 23m mixed layer
Cast 060 sta 80.0 80.0: 21-bottle cast to 515m
Cast 061 sta 80.0 90.0: 21-bottle prodo cast to 515m; 12m secchi
Cast 062 sta 76.7 90.0: 20-bottle cast to 515m; 20m chl max
Cast 063 sta 76.7 80.0: 20-bottle cast to 515m; 18m chl max

Cast 064 sta 76.7 70.0: 21-bottle prodo cast to 515m

Cast 065 sta 76.7 60.0: 20-bottle cast to 515m; 15m chl max

Cast 066 sta 76.7 55.0: 21-bottle cast to 515m; 10m chl max; large swells, down at 30 then 40m/min; lots of adjusting for bottle depths

Cast 067 sta 76.7 51.0: 16-bottle cast to 231m; 241m bottom; quick CTD cast, only 25sec soak/bottle so we have time for nets; calmer & foggy; last sta

JRW 09/20/2018