1407NH CTD Processing Summary (/cruises/2014-cruises/calcofi-1407nh/547-1407nh-ctd-processing-summary.html)

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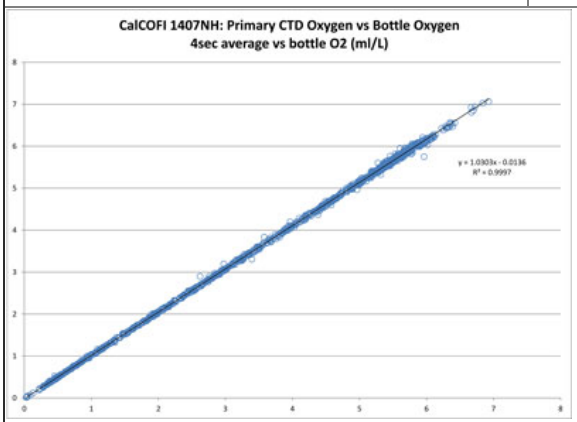
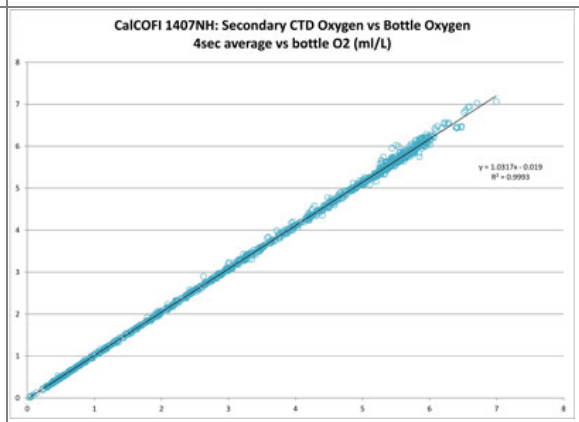
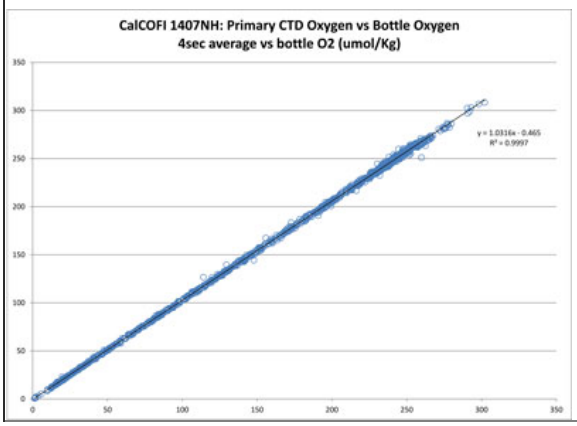
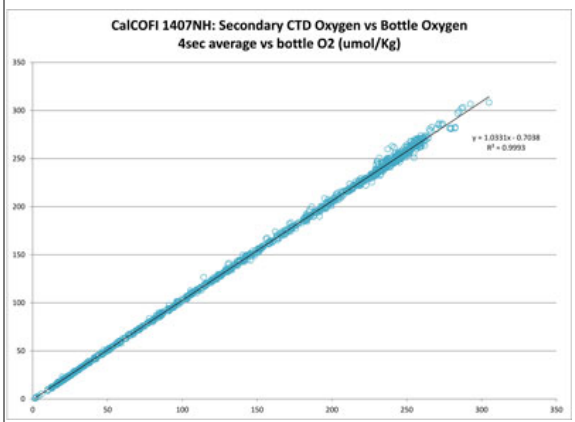
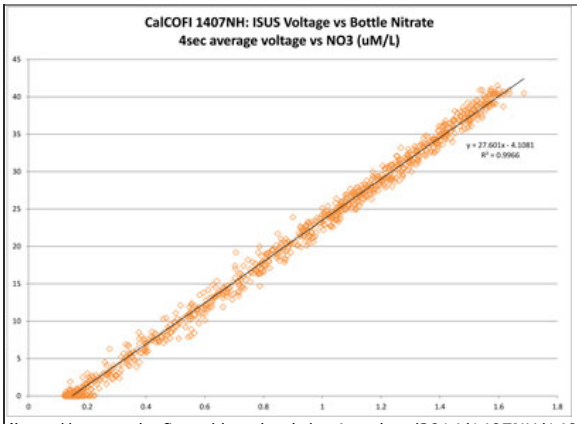
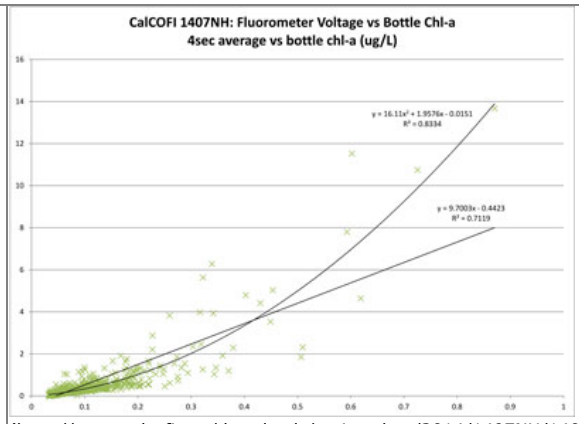
Last Updated: 10 March 2017

CTD Processing Summary CalCOFI 1407NH CTD Final Data		
Download 1407NH CTD raw cast files zipped (http://cappuccino.ucsd.edu/downloads/2014/20-1407NH_CTDCast.zip)		Download 1407NH FinalQC CTD + bottle data (http://cappuccino.ucsd.edu/downloads/2014/20-1407NH_CTDFinalQC.zip)
General CTD Notes - data acquisition notes, logistics, processing - see below		
CTD sensor corrections derived by comparing 4 secs of CTD sensor data (prior to bottle closure) to bottle samples		
Dual T, S, & O2	Primary Sensor	Secondary Sensor
Salinity offset (bottle - CTD salinity; > 350m only; Seabird SBE4)	-0.0017	-0.0004
Oxygen ml/L (dual Seabird SBE43)	y = 1.0303x - 0.0136 R² = 0.9997	y = 1.0317x - 0.019 R² = 0.9993
Oxygen umoles/Kg (dual Seabird SBE43)	y = 1.0316x - 0.465 R² = 0.9997	y = 1.0331x - 0.7038 R² = 0.9993
Single sensors	Linear	Polynomial
Nitrate - ISUS 4sec ave voltage vs Bottle Nitrate (Satlantic MBARI-ISUS v2)	y = 27.601x - 4.1081 R² = 0.9966	
Fluorometer - linear & polynomial regressions	y = 9.7003x - 0.4423 R² = 0.7119	$y = 16.11x^2+1.9576x-0.0151$ R² = 0.8334
 (http://www.calcofi.org/downloads/cruise_data/2014/1407NH/1407NH_Ox1MLvsOxB.jpg)		 (http://www.calcofi.org/downloads/cruise_data/2014/1407NH/1407NH_Ox2MLvsOxB.jpg)
(http://www.calcofi.org/downloads/cruise_data/2014/1407NH/1407NH_Ox1UMvsOxB.jpg) 		 (http://www.calcofi.org/downloads/cruise_data/2014/1407NH/1407NH_Ox2UMvsOxB.jpg)

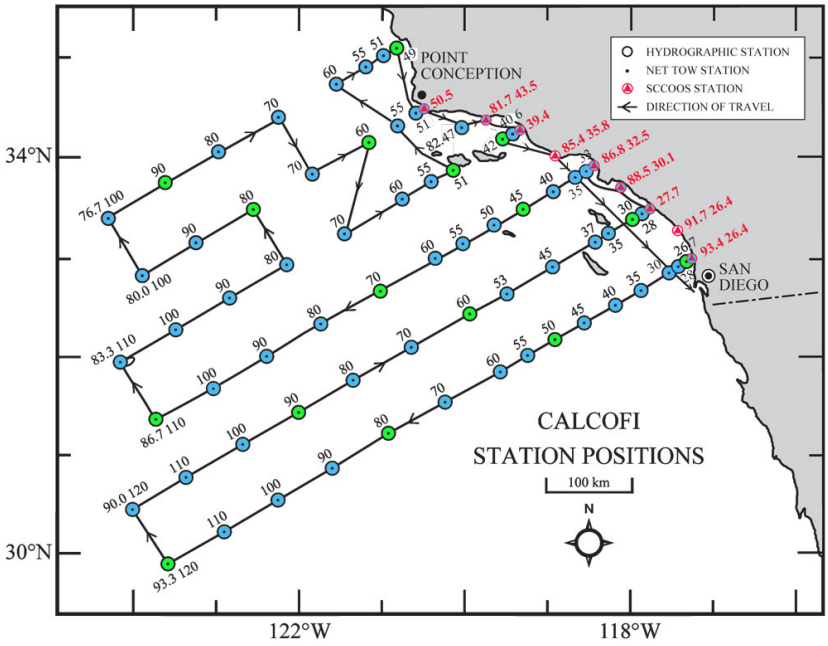


(http://www.calcofi.org/downloads/cruise_data/2014/1407NH/1407NH_ISUSVvsNO3.jpg)



(http://www.calcofi.org/downloads/cruise_data/2014/1407NH/1407NH_FlVvsChla.jpg)

General notes: These are cast & final CTD Processing Notes from 1407NH cruise



CalCOFI 1407NH General Cast Notes: This cruise occupied 75 stations: 66 standard, & 9 SCCOOS. The station schedule was modified due to naval operations on lines 83 & 80 plus bad weather forecast. Refer to the map for the station order and cruise track. Coastal stations on line 83 & 80 (51, 50.5) & Santa Barbara Basin were done after lines 80 & 77 were completed.
CalCOFI 1407NH was on SIO RV New Horizon. Termination of the three conductor conductive wire was done by JRW using the 4-pin pigtail. Only the white conductor and shield were used for signal & ground.

CTD configuration was standard: Seabird 911+ with dual T, C, O2, & pumps; Wetlabs C-Star 25cm transmissometer; Biospherical QSP200L PAR; Datasonics/Benthos Altimeter; WET Labs ECO-AFL/FL; Seabird pH; Satlantic ISUS v2 & battery. Please refer to the xmlcon files or cruise prospectus for additional info.

Cast Notes:

Cast 01 - trigger #1 replaced pre-cast since it deck-tested poorly; bottle #9 did not close so the CTD was sent back to 13m & bottle 11 closed

Cast 03 - bottle 9 did not trip again; trigger changed post-cast.

Cast 04 - winch had to go back down on the upcast after the 100m bottle closure due to a bad wire wrap

Cast 07 - bottle 20 didn't close so the CTD went back down and bottle 22 was closed at 7m.

Cast 10 - rolling seas

Cast 11 - extra bottle tripped at 130m wrong depth, went back down for 140m; bottle #3 did not trip - trigger cleaned post-cast

Cast 20 & 21 - sta 90.90 prodo cast & separate 3500m cast with 6 bottles tripped at 3500, two at 650m, 4 at surface - bottle #24 closed upon retrieval at the waterline. Cast 21 CalCOFI Line & Sta number changed from 90.0 90.0 to 90.0 90.1 to distinguish the two casts & bottle samples.

Cast 23 - new Temperature sensor #2533 installed on secondary channel. Turns out the original T sensor was fine, the wrong config file (from 1404) was loaded. The result is separate data files for downcast 1407023 & upcast 1407023u.

Cast 24 - original secondary temperature sensor reinstalled #5102.

Cast 26 - fluorometer spikes at depths 515m, 360m, & 210m

Cast 27 - full moon; bottle #5 did not close. Spiney lobster larvae in CUFES (sta 90.37)

Cast 28 - shallow 300m cast; altimeter detected bottom at ~55m; calm sunny morning

Cast 29 - sta mislabeled 90.35 in hdr, should be 90.30; hdr & hex files corrected using text & hex editors.

Cast 33 - sta mislabeled 86.7 in hdr, should be 86.8; hdr & hex files corrected using text & hex editors.

Cast 36 - Santa Barbara Basin, calm sunrise; 100-400m stratified layers looked screwy on downcast but verified on upcast; pump status reviewed post-cast and pumps were operational. Nine niskins were tripped between 100 - 400m so we'll review those values as well.

Cast 39 - fairly rough and rolling

Cast 40 - rough seas, winch speed 30m/min all the way down; extra 20m bottle tripped and ignored.

Cast 44 - some rolls but relatively calm again

Cast 48 - calm warm night

Cast 49 - early morning station, sta 83.90, near Navy Operations area.

Cast 50 - sta 80.80, stations out of sequence because of naval operations closing line 80 & 83 inshore (>80).

Cast 51 - heading west, on sta 80.90; unusual oxygen layer at ~225m seen on both primary & secondary sensors. Downcast stopped at 495m because smoke was smelt - turned out to be cigar smoke, not the winch. CTD continued to 515m.

Cast 52 - primary salinity spike at ~430 on downcast, primary T looks fine so probably primary C; secondary salinity is fine

Cast 53 - calm with some occasional rolls

Cast 55 - rolly on a flat calm day; ship in trough

Cast 56 - wrong cast type selected initially; CTD came up to 230m then back to 270m then to 200m

Cast 60 - restarted 2x, first because of primary & secondary sensors disagreement, xmlcon verified as correct; second because as the CTD went down, the secondary sensor values did not change. CTD was recovered, the plumbing back flushed to dislodge any biofouling - nothing obvious but when redeployed, everything looked fine.

Cast 64 - mistrip bottle #2, extra bottle tripped at 270 - not sampled

Cast 65 - deck tested, trigger #2 cleaned pre-cast; calm night with light rain

Cast 66 - calm beautiful sunrise; chl max at 16m but no bottle tripped there

Cast 67- wrong xmlcon file used again, 1404 from shallow station loaded. Replaced 1407067.xmlcon with 1407066.xmlcon copied & renamed 1407067.xmlcon

Cast 69 - bottle #2 did not close

Cast 70 - Santa Barbara Basin station

Cast 72 - bright sunny SCCOOS station

Cast 75- Pt Dume SCCOOS, last station

File notes:
Seasoft-generated asc-hdr files were not renamed to YY-YYLLLLSSSS_###d or u.asc & .hdr. Voltages were not relabled. This practice makes it difficult to reprocess the CTD if necessary.
Mislabels found and corrected:

Cast 29 - sta mislabeled 90.35 in hdr, should be 90.30; hdr & hex files corrected using text & hex editors.
Cast 33 - sta mislabeled 86.7 in hdr, should be 86.8; hdr & hex files corrected using text & hex editors.

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