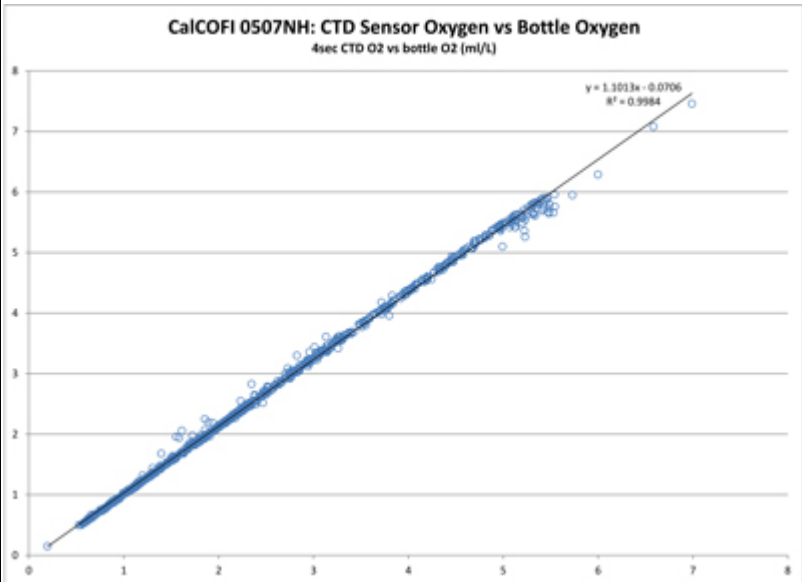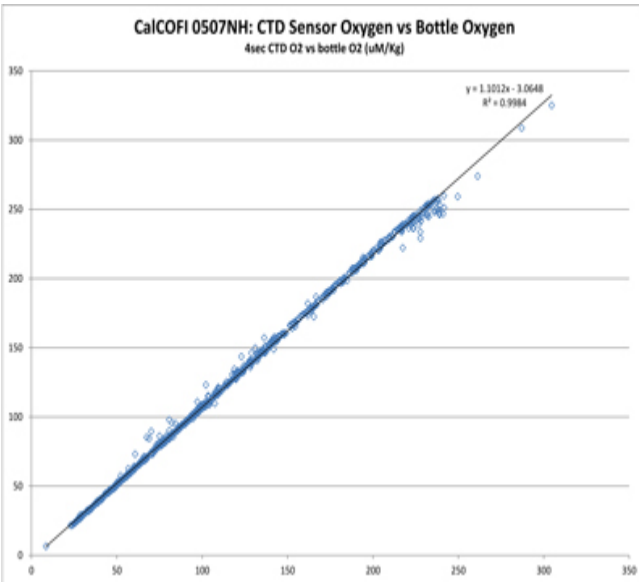# 0507NH CTD Processing Summary

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

Category: 2005 Cruises (/cruises/older-cruises/186-2005-cruises.html)
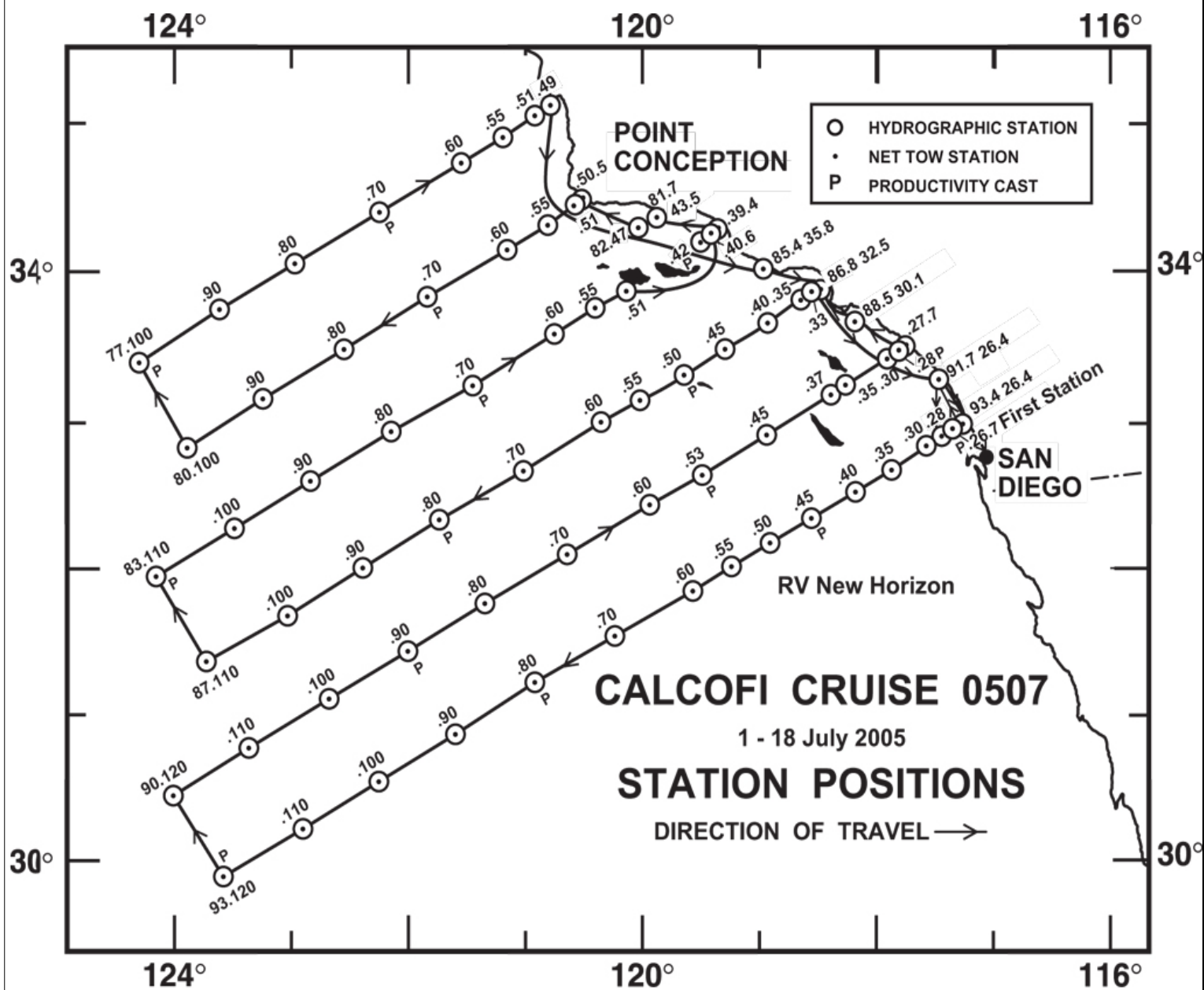
Last Updated: 15 March 2019

CTD Processing Summary CalCOFI 0507NH CTD Final Data (reprocessed/reformatted 03/2019)	
Download 0507NH CTD raw cast files zipped (http://cappuccino.ucsd.edu/downloads /2005/20-0507NH_CTDCast.zip)	Download 0507NH FinalQC CTD + bottle data (http://cappuccino.ucsd.edu/downloads /2005/20-0507NH_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)	-0.0005	-0.0063
Single sensors - note only one CTD O2 sensor	ml/L	uM/Kg
Oxygen (ml/L & uM/Kg; single Seabird SBE43)	$y = 1.1013x - 0.0706$ $R^2 = 0.9984$	$y = 1.1012x - 3.0648$ $R^2 = 0.9984$
Satlantic MBARI-ISUS (SN#919) deployed	$y = 27.508x - 5.9871$ $R^2 = 0.984$	
SCUFA Fluorometer - linear & polynomial regressions	$y = 17.396x - 0.3812$ $R^2 = 0.6072$	$y = 1.4442x2 + 16.906x - 0.3642$ $R^2 = 0.6073$

(http://cappuccino.ucsd.edu/downloads/2005/0507NH /0507NH_Ox1MLvsOxBML.jpg)

(http://cappuccino.ucsd.edu/downloads /2005/0507NH/0507NH_Ox1UMvsOxBUM.jpg)

(http://cappuccino.ucsd.edu/downloads/2005/0507NH /0507NH_ISUSVvsNO3.jpg)

(http://cappuccino.ucsd.edu/downloads /2005/0507NH/0507NH_SCUFAFIVvsChla.jpg)

General notes: Station Pattern & Cruise Track

(https://cappuccino.ucsd.edu/downloads/2005/0507NH/0507NH_CruiseTrack.jpg)

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CalCOFI 0507NH occupied 75 of 75 scheduled stations. Primary sensor data were pretty clean but there were issues with the secondary conductivity sensor from surface to ~75m (cable was finally identified post-cruise). ISUS batteries were swapped after every 3 casts since charging the battery on the rosette was not implimented yet. Fifteen station lost ISUS nitrate profiles due to battery and/or power cable issues or operator error (forgetting to plug in or unplug the battery).

All casts had the SCUFA fluoromete. Please refer to each casts hdr file for specific module settings and order of application. All other CTD sensors were not changed during the cruise.

Seabird 911+ configuration:
Please refer to text file: FirstThreeCastTCConfig.txt for specific sensor ids.

Primary Temperature (#2533), Conductivity (#2206), and O2 sensor (#680), pumped (#55060); Secondary Temperature (#1324), Conductivity (#722) pumped (#52236); Wetlabs (CST-490DR) 25cm transmissometer (mislabeled Chelsea/Seatech in con; used original calculated M & B); SCUFA fluorometer used on all casts; Benthos/Datasonics Altimeter (#46604); MBARI-ISUS v2 (#919) Nitrate sensor; remote PAR (#4544), surface PAR (SN 6369).
(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 0507NH CTD Data Processing & Console Ops Notes

Removed salt fliers on both primary & secondary comparisons. Original data processor was MGS, and some O2 & NO3 "flier" data points were not removed in the regression plots.

Deepest CTD cast was 704m at sta 86.7 40.0 Cast 036, Santa Monica Basin.

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

General Notes: We started data acquisition AFTER deploying and 2 minutes @10m soak. Loopedit & Wildedit were applied to all casts.

CTD Setup:

V0 - Tr (CST490DR), original M & B calculated pre-cast 1 were used
V1 - SCUFA Fluorometer
V2 - ISUS Nitrate Sensor, battery powered
V3 - open
V4 - SBE43 Oxygen Sensor (only one O2 sensor deployed pre-2009)
V5 - open
V6 - Benthos/Datasonic Altimeter

V7 - PAR
V15 - SPAR

Sensors: T1 - SN2533; T2 - SN1324; C1 - SN2206; C2 - SN722; O2 - SN680; PAR - 4544; SPAR - SN6369

Reprocessing in 2019 used the original final .asc files to merge with bottle data. Although new .asc files were generated with wfilter applied to ISUS. The V2 & est NO3 columns from new CTD.csvs were imported into the CTD.csvs generated from the original 2011 asc final CTD data. WIth the continual problem with secondary salinity near surface on almost all casts, derived data such as density (sigma-theta) which rely on salinity, are also bad. Using primary sensor data is recommended.

Other cast issues noted during processing:
Mislabel line.sta in .hdrs:
Cast 039 Line.Sta was misformatted as 87.55q, corrected to 87.55
Cast 054 Line.Sta was misformatted as 83.40.6; corrected to 83.3 40.6
Cast 059 Line.Sta was misformatted as 80.50.5; corrected to 80.0 50.5
Other casts had integer Line.Sta but these were parsed correctly

Data issues:
Cast 055 SCCOOS sta 83.3 39.4 CTD cast to 15m has no data except .mrk values (included in the FinalQC). The operator DMW forgot to initiate data archiving and they were in a rush to get to the next station for prodo so no recast was done. Bottles were closed at 15m, 10m, 5m, 2m so refer to .mrk for temperature & bottle data for other parameters.
No ISUS data collected on Casts: 001-006, 008, 010, 026, 038, 039, 057, 059, 071
Almost all casts had bad secondary conductivity data in the upper 50-70m, stabilizing deeper. Use primary salinities for shallow values.

JRW 03/15/2019