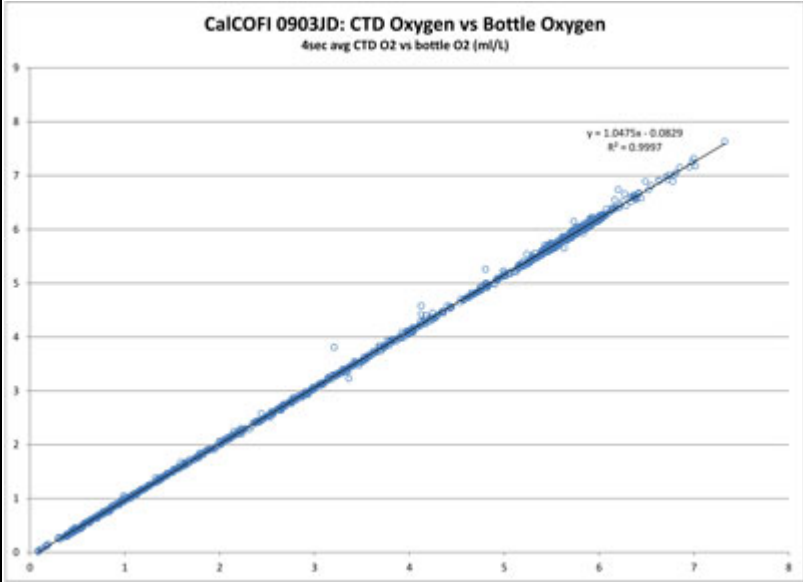
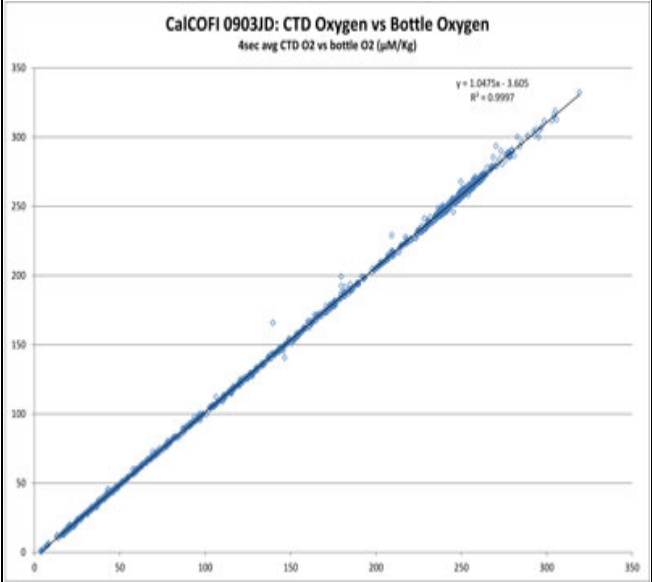


0903JD CTD Processing Summary

Parent Category: 2009 Cruises (/cruises/older-cruises/2009.html)

Category: CalCOFI 0903JD (/cruises/older-cruises/2009/202-calcofi-0903jd.html)

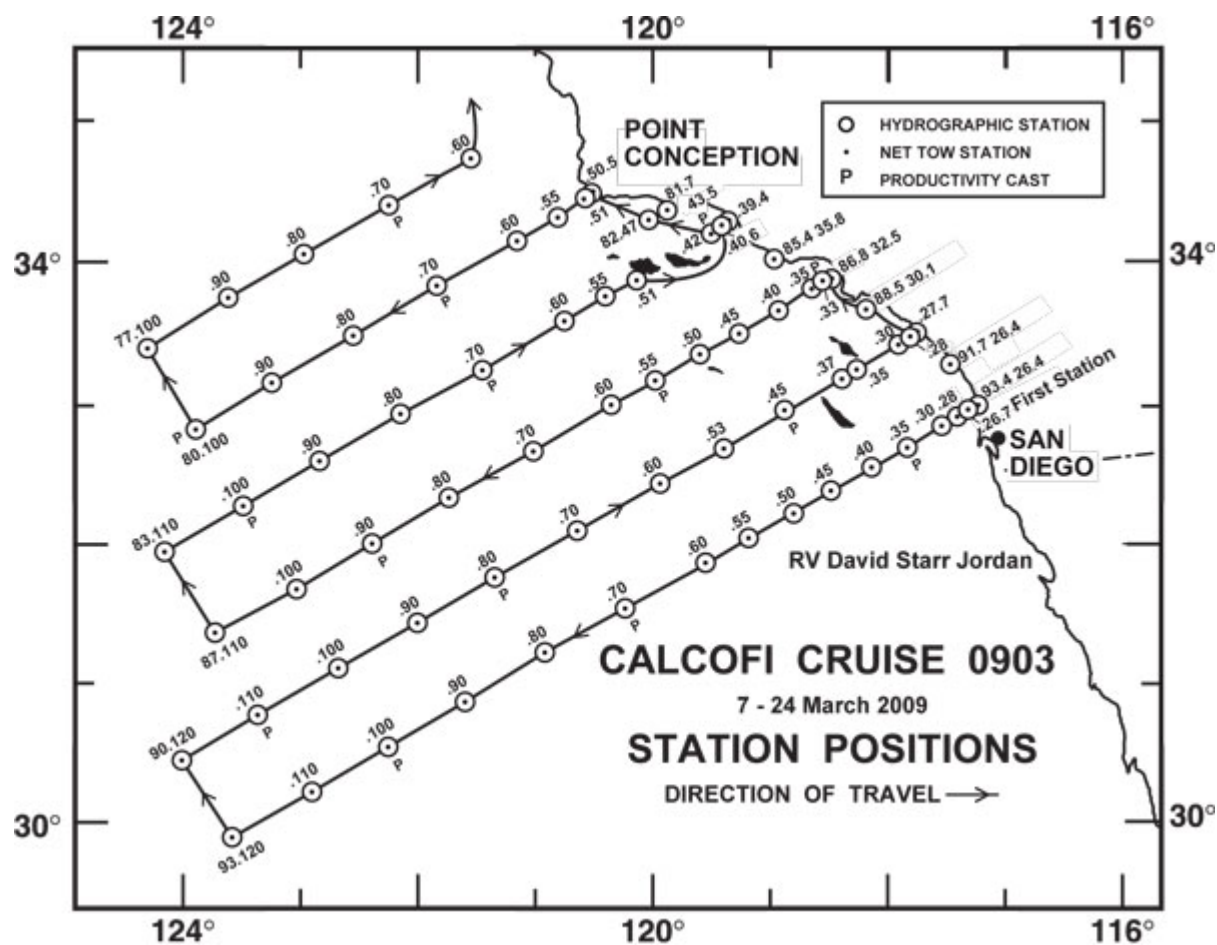
Last Updated: 07 August 2018

CTD Processing Summary CalCOFI 0903JD CTD Final Data (reprocessed/reformatted 08/2018)		
Download 0903JD CTD raw cast files zipped ( <a href="http://cappuccino.ucsd.edu/downloads/2009/20-0903JD_CTDCast.zip">http://cappuccino.ucsd.edu/downloads/2009/20-0903JD_CTDCast.zip</a> )		Download 0903JD FinalQC CTD + bottle data ( <a href="http://cappuccino.ucsd.edu/downloads/2009/20-0903JD_CTDFinalQC.zip">http://cappuccino.ucsd.edu/downloads/2009/20-0903JD_CTDFinalQC.zip</a> )
<b>General CTD Notes</b> - 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)	0.0018	-0.0172
Single sensors - note CalCOFI Cruises 0903JD and earlier deployed one CTD O2 sensor		
Oxygen (ml/L; single Seabird SBE43)	$y = 1.0475x - 0.0829$ $R^2 = 0.9997$	$y = 1.0475x - 3.605$ $R^2 = 0.9997$
Nitrate - ISUS 4sec ave voltage vs Bottle Nitrate (Satlantic MBARI-ISUS v2)	$y = 27.778x - 11.85$ $R^2 = 0.9805$	
Fluorometer - linear & polynomial regressions	$y = 5.3458x - 0.2113$ $R^2 = 0.7388$	$y = 1.291x^2 + 3.9588x - 0.0852$ $R^2 = 0.7647$
		
<a href="http://cappuccino.ucsd.edu/downloads/2009/0903JD/0903JD_Ox1MLvsOxBML.jpg">http://cappuccino.ucsd.edu/downloads/2009/0903JD/0903JD_Ox1MLvsOxBML.jpg</a>		<a href="http://cappuccino.ucsd.edu/downloads/2009/0903JD/0903JD_Ox1UMvsOxBUM.jpg">http://cappuccino.ucsd.edu/downloads/2009/0903JD/0903JD_Ox1UMvsOxBUM.jpg</a>

([http://cappuccino.ucsd.edu/downloads/2009/0903JD/0903JD\\_ISUSVsNO3.jpg](http://cappuccino.ucsd.edu/downloads/2009/0903JD/0903JD_ISUSVsNO3.jpg))

([http://cappuccino.ucsd.edu/downloads/2009/0903JD/0903JD\\_FIVVsChla.jpg](http://cappuccino.ucsd.edu/downloads/2009/0903JD/0903JD_FIVVsChla.jpg))

## General notes: Station Pattern & Cruise Track



## CalCOFI 0903JD March 7 - 24 2009, San Diego to San Francisco

### Cruise and CTD Data Processing Notes

CalCOFI 0903JD was CalCOFI's last cruise on NOAA RV David Starr Jordan since the ship will be decommissioned before our next winter cruise. (CalCOFI will sail on RV Ocean Starr, Staubert Marine's refurbished/retrofitted David Starr Jordan in July 2012).

RV Jordan was loaded at MArFac. San Diego March 5th - 6th & offloaded in San Francisco March 24th.

#### Seabird 911+ configuration:

Primary Temperature (#1324), Conductivity (#042206), and O2 sensor (#431075), pumped (#55060); Secondary Temperature (#2533), Conductivity (#357) pumped (#52236); Wetlabs (CST-479DR) 25cm transmissometer (mislabelled Chelsea/Seatech in con); Seapoint chlorophyll fluorometer (SCF2483 @10x); Benthos/Datasonics Altimeter (#46604); MBARI-ISUS v1 (#111); no surface PAR was installed.

(Freq0=T0; Freq1=C0; Freq2=Pr; Freq3=T1; Freq4=C1; V0=Trans; V1=Fl; V2=Alt; V3=ISUS; V4=O21; V5=open; V6=open; V7-open)

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

#### Seabird 911+ configuration:

Primary Temperature (#1324), Conductivity (#042206), and O2 sensor (#431075), pumped (#55060); Secondary Temperature (#2533), Conductivity (#357) pumped (#52236); Wetlabs (CST-479DR) 25cm transmissometer (mislabelled Chelsea/Seatech in con); Seapoint chlorophyll fluorometer (SCF2483 @10x); Benthos/Datasonics Altimeter (#46604); MBARI-ISUS v1 (#111); no surface PAR was installed.

(Freq0=T0; Freq1=C0; Freq2=Pr; Freq3=T1; Freq4=C1; V0=Trans; V1=Fl; V2=Alt; V3=ISUS; V4=O21; V5=open; V6=open; V7-open)

#### Logistics:

We completed 63 standard stations and 8 SCCOOS stations before transiting north to offload in San Francisco. The last three stations on Line 76.7 (77) were dropped due to rough weather and lack of ship time: 76.7 55.0, 76.7 51.0, 76.7 49.0; SCCOOS sta 88.5 30.1 was also dropped due to lack of ship time.

Typical Spring stations north of line 76.7 (77) were occupied by FV Frosti which sailed from San Francisco 16 Apr to San Diego 09 May (see DEPM 0903FR for more info). Standard CalCOFI seawater analyses were performed on all depth sampled. The Jordan tied up in San Francisco and was offloaded onto trucks for equipment transport back to San Diego.

## CalCOFI 0903JD CTD Data Processing &amp; Console Ops Notes

Bottle NO3s drifted up and were questionable until a mid-cruise fix. The data required a baseline shift. ISUS showed the bottle data had a distinct shift-drift over time. See pdf figures.

Removed salt fliers on both primary & secondary comparisons.

**No deep CTD casts (>515m) were performed this cruise since RV David Starr Jordan does not have enough winch wire**

## Console Ops Cast Notes:

Cast 001 Sta 93.3 26.7: 9 bottle cast to 65m, 70m bottom; 10m chl max

Cast 002 SCCOOS Sta 93.4 26.4: 4 bottle cast to 15m, 18m bottom

Cast 003 SCCOOS Sta 91.7 26.4: 5 bottle cast to 16m, 20m bottom

Cast 004 Sta 93.3 28.0: 20 bottle cast to 515m; 22m chl max

Cast 005 Sta 93.3 30.0: 20 bottle cast to 515m; Knudsen not working, bottom depth uncertain ~850m; bottle #13 mistripped; 28m chl max

Cast 006 Sta 93.3 35.0: 21 bottle prodo cast to 515m; 34m chl max

Cast 007 Sta 93.3 40.0: 21 bottle to 515m; 42m chl max

Cast 008 Sta 93.3 45.0: 20 bottle cast to 515m; chl max 18m

Cast 009 Sta 93.3 50.0: 20 bottle cast to 515m; chl max 50m

Cast 010 Sta 93.3 55.0: 22 bottle cast to 515m; chl max 45m

Cast 011 Sta 93.3 60.0: 20 bottle cast to 515m; chl max 40m

Cast 012 Sta 93.3 70.0: 21 bottle (late) prodo cast to 515m; chl max 45m; 40m mixed layer; stopped ~2nm short to help with time

Cast 013 Sta 93.3 80.0: 20 bottle cast to 515m; chl max 35m; 28m mixed layer; unsupported modem message noticed at bottle #7 closure

Cast 014 Sta 93.3 90.0: 20 bottle cast to 515m; chl max 65m; 50m mixed layer; moderate rollers, some wire angle; missed marker on #16, had to go back down - yo-yo'd

Cast 015 Sta 93.3 100.0: 22 bottle prodo cast to 522m; chl max 77m; 30m/min to 100m, 40m/min to 515m; blue water, grey skies; 44m mixed layer, 25m secchi

Cast 016 Sta 93.3 110.0: 20 bottle cast to 515m; chl max 80m; 60m mixed layer

Cast 017 Sta 93.3 120.0: 22 bottle cast to 515m; chl max 100m; 63m mixed layer; 2 extra LTER surface bottles closed

Cast 018 Sta 90.0 120.0: 22 bottle cast to 515m; chl max 72m; 66m mixed layer; 2 extra LTER surface bottles closed

Cast 019 Sta 90.0 110.0: 22 bottle prodo cast to 515m; chl max 94m; 90m mixed layer; 35m secchi

Cast 020 Sta 90.0 100.0: 20 bottle cast to 515m; chl max 80m; 40m mixed layer

Cast 021 Sta 90.0 90.0: 20 bottle cast to 515m; chl max 65m

Cast 022 Sta 90.0 80.0: 22 bottle (early) prodo cast to 515m; chl max 45m; 19m secchi

Cast 023 Sta 90.0 70.0: 20 bottle cast to 515m; chl max 40m; 46m mixed layer

Cast 024 Sta 90.0 60.0: 20 bottle cast to 515m; chl max 50m; 50m mixed layer; bottle #2 bottom cap leaking; bottle #12 bottom valve broken

Cast 025 Sta 90.0 53.0: 21 bottle cast to 515m; weird firing sequence (1,2,8,4,5...) onscreen; extra marker at #12; sampling looked fine

Cast 026 Sta 90.0 45.0: 22 bottle (early) prodo cast to 515m; chl max 19m, 16m mixed layer

Cast 027 Sta 90.0 37.0: 20 bottle cast to 515m; chl max 24m, 7m mixed layer

Cast 028 SCCOOS Sta 90.0 27.7: 6 bottle cast to 35m, 36m bottom(!)

Cast 029 Sta 90.0 28.0: 8 bottle cast to 60m; 65m bottom; chl max 20m

Cast 030 Sta 90.0 30.0: 21 bottle cast to 515m; chl max 25m

Cast 031 Sta 90.0 35.0: 18 bottle cast to 318m; 350m bottom variable; chl max 30m;

Cast 032 SCCOOS Sta 86.8 32.5: 5 bottle cast to 20m

Cast 033 Sta 86.7 33.0: 9 bottle prodo cast to 50m; 54m bottom; chl max 25m, 20m mixed layer, 11m secchi; upcast

different than downcast

Cast 034 Sta SCCOOS 85.4 35.8: 7 bottle cast to 30m; 36m bottom; 15m chl max

Cast 035 Sta 86.7 35.0: 21 bottle cast to 515m; chl max 10m

Cast 036 Sta 86.7 40.0: Santa Monica Basin 24 bottle 715m cast; bottom 740-720m; 2m chl max; bottle #24 trigger stuck but popped at surface

Cast 037 Sta 86.7 45.0: 21 bottle cast to 515m; big wire angle; Knudsen bottom depth not working; mislabeled as cast 036 (last stations) - fixed

Cast 038 Sta 86.7 50.0: San Nicolas Is sta, 10 bottles to 70m, 72m bottom

Cast 039 Sta 86.7 55.0: 22 bottle prodo cast to 515m; sunny windy rough - 30m/min to 100m then 40m/min to 515m; 35m chl max, 50m mixed layer, 13m secchi

Cast 040 Sta 86.7 60.0: 21 bottle 515m cast, DIC station; surface salinity ~32.99; sunny windy choppy

Cast 041 Sta 86.7 70.0: 22 bottle cast to 515m; bottle mistakenly tripped at ~350m, bottle #4, only salt sample drawn

Cast 042 Sta 86.7 80.0: 21 bottle 515m cast

Cast 043 Sta 86.7 90.0: 24 bottle prodo cast to 515m; surface bottle closed using a boat hook, data acquisition stopped at seawater surface; chl max 85m

Cast 044 Sta 86.7 100.0: 21 bottle cast to 515m; trigger #24 replaced; chl max 72m

Cast 045 Sta 86.7 110.0: 24 bottle cast to 515m; 3 extra LTER surface bottles closed + 10m bottle; chl max 44m, 14m mixed layer

Cast 046 Sta 83.3 110.0: 23 bottle cast to 515m; 3 extra LTER surface bottles closed + 10m bottle; chl max ~40m; Happy St. Patty's Day

Cast 047 Sta 83.3 100.0: 22 bottle prodo cast to 515m; big swells, going down slow 30-40m/min; 55m chl max, 20m mixed layer, 21m secchi

Cast 048 Sta 83.3 90.0: 21 bottle 515m cast; 48m chl max

Cast 049 Sta 83.3 80.0: 21 bottle 515m cast; big swells - changing wire angles; bottle #17 mistrip; 80m mixed layer

Cast 050 Sta 83.3 70.0: 22 bottle early prodo cast to 515m

Cast 051 Sta 83.3 60.0: 22 bottle 515m cast; extra surface bottle for O2 test case

Cast 052 Sta 83.3 55.0: 21 bottle cast to 515m; chl max 16m, 10m mixed layer; bottle #1 bottom not closed all the way; unsupported modem message recorded ~bottle #3

Cast 053 Sta 83.3 51.0: 10 bottle cast to 70m; chl max ~2m; altimeter read ~10m at terminal depth

Cast 054 Sta SCCOOS 83.3 39.4: 5 bottle cast to 15m, 17m bottom; Type I

Cast 055 Sta 83.3 40.6: 7 bottle cast to 27m; 31m bottom

Cast 056 Sta 83.3 42.0: 11 bottle prodo cast to 110m, 115m bottom; chl max 19m, 5m mixed layer

Cast 057 Sta SCCOOS 81.7 43.5: rather deep 35m SCCOOS cast, 7 bottles; 20m chl max, 35m bottom

Cast 058 Sta 81.8 46.9: Santa Barbara Basin+DIC station, 24 bottle cast; chl max 10m; calm gree grey skies but warm

Cast 059 Sta SCCOOS 80.0 50.5: 5 bottle cast to 20m, 26m bottom

Cast 060 Sta 80.0 51.0: 9 bottle cast to 65m

Cast 061 Sta 80.0 55.0: 21 bottle cast to 518m; big swells, hard to hit target depths; chl max ~10-20m

Cast 062 Sta 80.0 60.0: 20 bottle cast to 515m

Cast 063 Sta 80.0 70.0: 21 bottle cast to 521m; 175-250m O2 & NO3 feature; rough seas!; post-cast note: bottle #17 mistripped again due to bent upper ring stancion next to #17 - temporary solution, longer lanyard loop

Cast 064 Sta 80.0 80.0: 20 bottle cast to 515m; chl max ~60m

Cast 065 Sta 80.0 90.0: 20 bottle cast to 517m; chl max ~82m

Cast 066 Sta 80.0 100.0: 21 bottle early bottle cast; Type II, 50m chl max, 45m mixed layer, 26m secchi

Cast 067 Sta 76.7 100.0: 22 bottle cast to 515m; sunny, relatively calm; 55m chl max

Cast 068 Sta 76.7 90.0: 20 bottle cast to 515m; chl max 50m

Cast 069 Sta 76.7 80.0: 20 bottle cast to 515m; chl max ~50m; rainy night; probable mistrip bottle #6 - O2 draw temp too high

Cast 070 Sta 76.7 70.0: 22 bottle early prodo cast; pretty big rollers - going down slow; Dalh's porpoises on upcast

Cast 071 Sta 76.7 60.0: 20 bottle cast to 515m; VERY marginal conditions, 30-50m winch speed - Joao on winch; 30+kt

winds with heavy rolls; chl max 22m, mixed layer 20m; NMEA light intermittent ~bottles #5-6

Stations 76.7 55.0, 51.0 & 49.0 cancelled - heading to San Francisco to offload

JRW 08/06/2018