0701JD CTD Processing Summary

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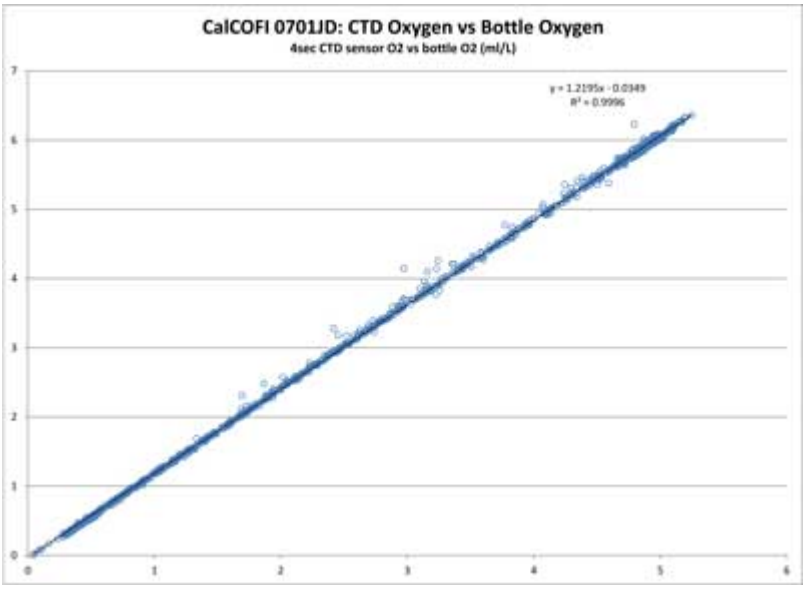
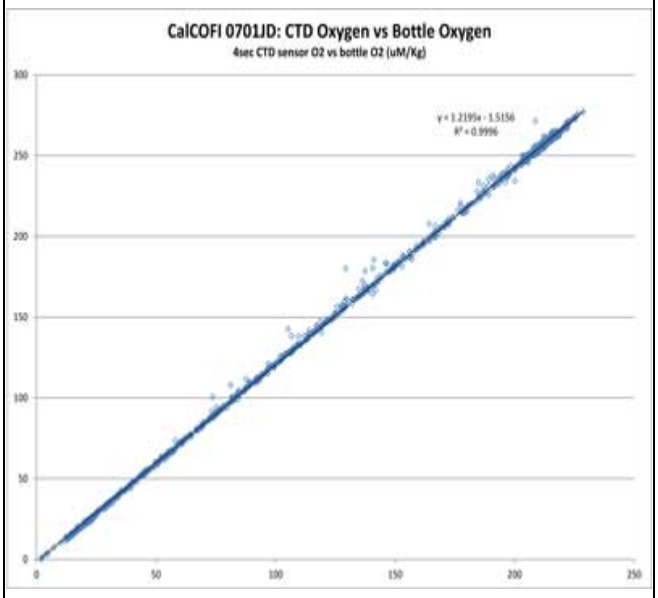
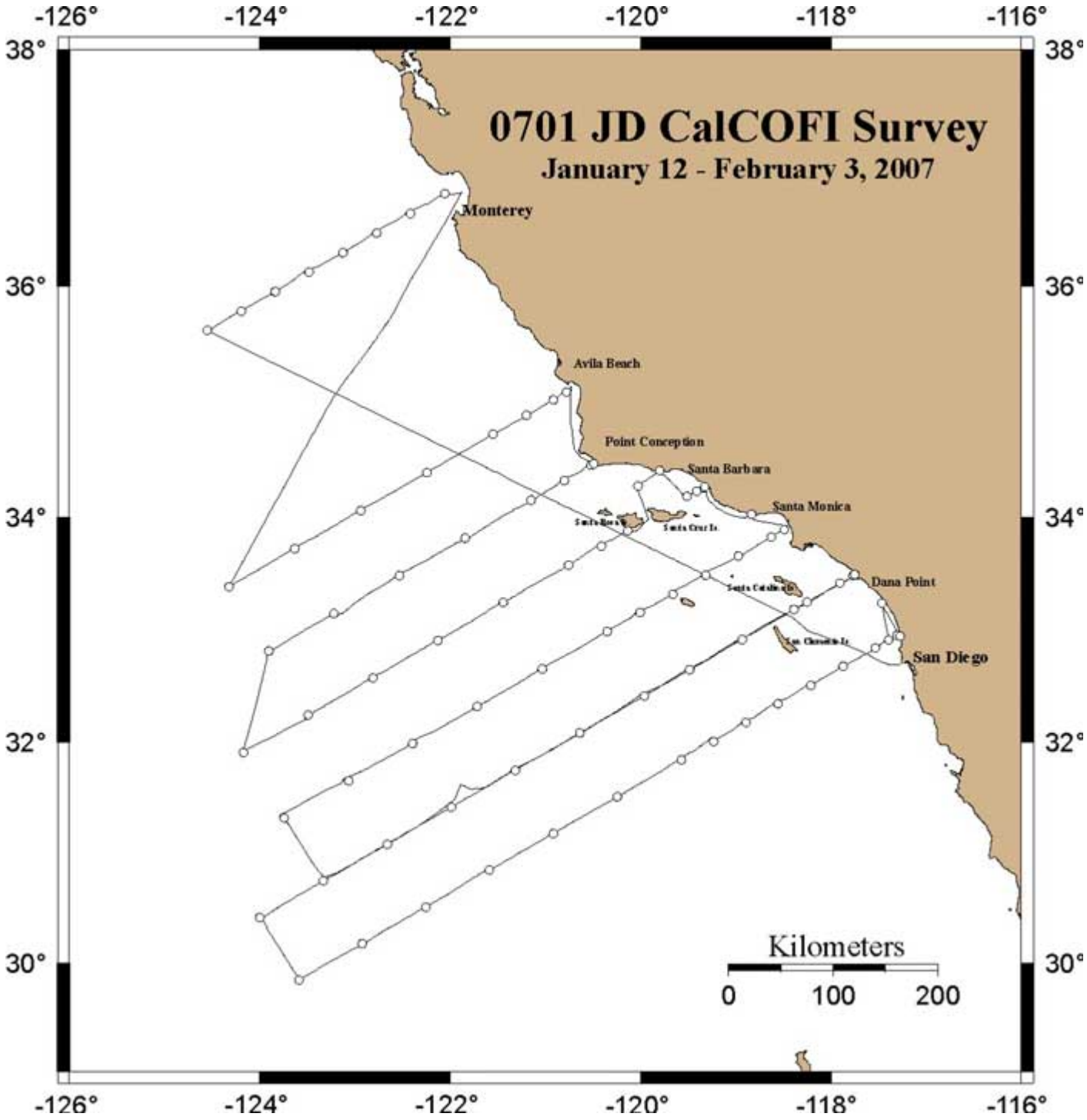
Last Updated: 13 December 2018

CTD Processing Summary CalCOFI 0701JD CTD Final Data (reprocessed/reformatted 12/2018)		
NOAA 0701JD Cruise Report pdf (http://cappuccino.ucsd.edu/downloads/2007/0701JD/0701JD.rpt.pdf)		
Download 0701JD CTD raw cast files zipped (http://cappuccino.ucsd.edu/downloads/2007/20-0701JD_CTDCast.zip)		Download 0701JD FinalQC CTD + bottle data (http://cappuccino.ucsd.edu/downloads/2007/20-0701JD_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)	-0.0013	0.0000
Single sensors - note only one CTD O2 sensor	ml/L	uM/Kg
Oxygen (ml/L & uM/Kg; single Seabird SBE43)	y = 1.2195x - 0.0349 R^2 = 0.9996	y = 1.2195x - 1.5156 R^2 = 0.9996
Nitrate - Satlantic MBARI-ISUS (SN#111 v2)	y = 29.954x - 11.539 R^2 = 0.9713	
Seapoint Fluorometer - linear & polynomial regressions	y = 3.3271x - 0.0951 R^2 = 0.7175	y = 1.7447x2+ 2.1954x - 0.0078 R^2 = 0.7285
 (http://cappuccino.ucsd.edu/downloads/2007/0701JD/0701JD_Ox1MLvsOxBML.jpg)		 (http://cappuccino.ucsd.edu/downloads/2007/0701JD/0701JD_Ox1UMvsOxBUM.jpg)

(http://cappuccino.ucsd.edu/downloads/2007/0701JD/0701JD_ISUSVvsNO3.jpg)	(http://cappuccino.ucsd.edu/downloads/2007/0701JD/0701JD_FlVvsChla.jpg)

General notes: Station Pattern & Cruise Track



CalCOFI 0701JD • 12 Jan - 03 Feb 2007 (Legs 1 & 2) • NOAA RV David Starr Jordan • San Diego to Monterey to San Diego

Cruise and CTD Data Processing Notes

CalCOFI 0701JD on NOAA RV David Starr Jordan Leg 1 successfully occupied 74 of 75 scheduled stations Jan 12 - 30. Acoustic calbration was not performed but fueling took several hours, delaying ship departure till 1500PST. Arrival to the 1st CalCOFI station was ~1735PST Jan 12, missing the 1st day prodo station. Leg I's last station was 76.7 100.0, completing the standard pattern; 8 of 9 SCCOOS stations were occupied on Leg I. SCCOOS sta 88.5 30.1 was dropped

because the cruise track did not sail north along the coast after Line 90, going WSW.

From NOAA's 0701JD Cruise Report:

- Leg I: Departed the Nimitz Marine Facility at 0800 on January 12, 2007 and moved to the Navy fuel pier to begin fueling. Departed the fuel pier around 15:00 and proceeded to the first station (93.3/26.7 - position 32° 57.38N 117° 18.32W). Continued to occupy stations up to 76.7 100.0 at which time operations were discontinued and the ship pulled into Monterey, California to complete leg I on January 31.
- Leg II: Departed Monterey on January 31 after exchanging scientific personnel and began occupying stations on line 66.7. Completed stations out to 85.0 and then returned to San Diego on February 3, 2007.

Seabird 911+ configuration:
Primary Temperature (#1324), Conductivity (#2206), and O2 sensor (#1075), pumped (#55060); Secondary Temperature (#1049), Conductivity (#722) 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), surface PAR (#6369) 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 0701JD CTD Data Processing & Console Ops Notes

On CalCOFI 0701JD, we tested starting CTD data acquisition on deck instead of waiting till after the 10min soak. We typically start data acquisition ~10mins before the cast but do not archive (save) the data. Starting archiving on deck insures data are acquired during the downcast. Since operators have to initiate archiving upon return to surface from 10m, it is sometimes forgotten.
Even though Seabird's data processing module Loopedit will remove the surface soak automatically. It causes problems with the SCCOOS casts since they are often less than the Loopedit's 20m depth settings. So for this cruise, Loopedit was applied to all stations deeper than 50m but shallow stations were not loopedited. We do not plan on adopting on-deck data archiving as a standard practice.

Bottle sample data fliers were removed before plotting bottle samples vs CTD data, generating the correction regressions.

1000m CTD casts were performed on Line 66.7 (MBARI-SECRET) on Leg II this cruise.

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

CalCOFI 0701JD CTD Data Processing Notes Seabird 911+ CTD with Deck Unit v1 requires AlignCTD of secondary conductivity sensor by 0.73sec. This has been applied along with a 4sec oxygen sensor offset. V0 - Transmissometer V1 - Seapoint Fluorometer V2 - ISUS v2 Nitrate sensor, user-polynomial V3 - open V4 - SBE43 O2 sensor V5 - open V6 - Altimeter V7 - PAR V15 - Surface PAR. Please note there is only one oxygen sensor deployed in 2007. Secondary sensor plots will only have O2 bottle data, no secondary O2 profiles.
There were cabling or battery problems with the ISUS on multiple casts: Casts 027, 040, 053 - 059 - poor or no data collected. Data codes annotate these issues in the data csvs. The SIO-CalCOFI CTD-rosette with ISUS stayed onboard & was deployed on Leg II. Nine stations on Line 66.7 had CTD casts to 1000m. These data are included in the data csvs & plots. On Leg II, 12 bottle samples (vs 20) including nutrients were collected and processed at sea.

Cast 058, sta 83.3 110, is split into two casts 058 & 058b - the upcast was interrupted and required stopping data acquistion. Cast 058b is ~86m to surface upcast data. These data have been merged into cast 058 data files.

JRW 12/13/2018