

en614 binned profiles

Date	Version	Notes	Who
6/10/2018	v1	Assembled profile workbook from binned *.asc files.	jpm
6/10/2018	v2	Made a v2 out of paranoia	jpm
		Added 5 columns at left for cruise, stn, etc info, bring in formulas from	
6/11/2018	v2	en600 sheet.	jpm
6/11/2018	v2	Add site info manually using event log	jpm
6/11/2018	v2	Clean up formatting for consistency	jpm
6/11/2018	v2a	Converted all formula fields to values for export and flatfile construction	jpm
6/11/2018	v2a	Exported individual sheets for concatenation	jpm
6/11/2018	v2	Assembled individual sheets into flatfile following usual routine	jpm
6/14/2018	v2	Add ODV style date-time column	jpm
12/11/2018	v2	Added parameter names and units to the flatfile	jpm

en614 representative header file (column IDs and units highlighted in blue)

- * Sea-Bird SBE 9 Data File:
- * FileName = D:\ctd\raw\614_003_03.hdr
- * Software Version Seasave V 7.26.7.107
- * Temperature SN = 2902
- * Conductivity SN = 2469
- * Number of Bytes Per Scan = 40
- * Number of Voltage Words = 5
- * Number of Scans Averaged by the Deck Unit = 1
- * System Upload Time = May 08 2018 23:45:21
- * NMEA Latitude = 08 20.87 N
- * NMEA Longitude = 054 24.69 W
- * NMEA UTC (Time) = May 08 2018 23:45:20
- * Store Lat/Lon Data = Append to Every Scan
- * SBE 11plus V 5.2
- * number of scans to average = 1
- * pressure baud rate = 9600
- * NMEA baud rate = 4800
- * surface PAR voltage added to scan
- * A/D offset = 2
- * Latitude/Longitude added to scan
- * GPIB address = 1

* advance primary conductivity 0.073 seconds
* autorun on power up is disabled
* S>
** Ship: R/V Endeavor
** Cruise: EN614
** Chief Scientist: Joseph Montoya
** Organization: Georgia Tech
** Area of Operation: Amazon Plume
** Dates: 06 May - 01 June 2018
** Bridgetown, Barbados to San Juan, Puerto Rico
** Bottom Depth: 1229
** Operator: jpm
** 003.03: After sed trap and BONO deployments
* System UTC = May 08 2018 23:45:21
nquan = 45
nvalues = 253
units = specified
name 0 = scan: Scan Count
name 1 = timeJ: Julian Days
name 2 = timeS: Time, Elapsed [seconds]
name 3 = prDM: Pressure, Digiquartz [db]
name 4 = depSM: Depth [salt water, m]
name 5 = t090C: Temperature [ITS-90, deg C]
name 6 = t190C: Temperature, 2 [ITS-90, deg C]
name 7 = T2-T190C: Temperature Difference, 2 - 1 [ITS-90, deg C]
name 8 = c0S/m: Conductivity [S/m]
name 9 = c1S/m: Conductivity, 2 [S/m]
name 10 = C2-C1S/m: Conductivity Difference, 2 - 1 [S/m]
name 11 = v0: Voltage 0
name 12 = CStarAt0: Beam Attenuation, WET Labs C-Star [1/m]
name 13 = CStarTr0: Beam Transmission, WET Labs C-Star [%]
name 14 = v1: Voltage 1
name 15 = fIECO-AFL: Fluorescence, WET Labs ECO-AFL/FL [mg/m³]
name 16 = v2: Voltage 2
name 17 = altM: Altimeter [m]
name 18 = v3: Voltage 3
name 19 = par: PAR/Irradiance, Biospherical/Licor [umol photons/m²/sec]
name 20 = v4: Voltage 4
name 21 = sbeox0V: Oxygen raw, SBE 43 [V]
name 22 = v5: Voltage 5
name 23 = sbeox1V: Oxygen raw, SBE 43, 2 [V]
name 24 = v6: Voltage 6
name 25 = v7: Voltage 7

name 26 = spar: SPAR, Biospherical/Licor [$\mu\text{mol photons/m}^2/\text{sec}$]
name 27 = pumps: Pump Status
name 28 = latitude: Latitude [deg]
name 29 = longitude: Longitude [deg]
name 30 = depSM: Depth [salt water, m], lat = 8.34783
name 31 = sal00: Salinity, Practical [PSU]
name 32 = sal11: Salinity, Practical, 2 [PSU]
name 33 = sigma- θ 00: Density [σ -theta, kg/m^3]
name 34 = sigma- θ 11: Density, 2 [σ -theta, kg/m^3]
name 35 = sbeox0Mm/L: Oxygen, SBE 43 [$\mu\text{mol/l}$], WS = 2
name 36 = sbeox1Mm/L: Oxygen, SBE 43, 2 [$\mu\text{mol/l}$], WS = 2
name 37 = potemp090C: Potential Temperature [ITS-90, deg C]
name 38 = potemp190C: Potential Temperature, 2 [ITS-90, deg C]
name 39 = svCM: Sound Velocity [Chen-Millero, m/s]
name 40 = svCM1: Sound Velocity, 2 [Chen-Millero, m/s]
name 41 = dz/dtM: Descent Rate [m/s], WS = 2
name 42 = gpa: Geopotential Anomaly [J/kg]
name 43 = nbin: number of scans per bin
name 44 = flag: flag
span 0 = -303, 19188
span 1 = 128.989678, 128.999080
span 2 = -12.674, 799.460
span 3 = 2.011, 255.590
span 4 = 2.000, 254.000
span 5 = 11.1833, 27.6961
span 6 = 11.1870, 27.6981
span 7 = -0.0645, 0.0154
span 8 = 3.948804, 5.636752
span 9 = 3.948507, 5.636360
span 10 = -0.007239, 0.009839
span 11 = 4.5648, 4.6887
span 12 = 0.4669, 0.5753
span 13 = 86.6036, 88.9839
span 14 = 0.0186, 0.0340
span 15 = -0.0366, 0.3644
span 16 = -0.2321, 2.8814
span 17 = -4.64, 57.63
span 18 = 0.0049, 1.6682
span 19 = 3.0321e-08, 4.0356e+00
span 20 = 1.2649, 2.4150
span 21 = 1.2645, 2.4150
span 22 = 1.4541, 2.7955
span 23 = 1.4537, 2.7955

```
# span 24 = 0.0972, 0.8148
# span 25 = 0.0000, 0.0000
# span 26 = 2.3889e+01, 2.6475e+01
# span 27 = 1, 1
# span 28 = 8.34767, 8.35227
# span 29 = -54.41292, -54.41136
# span 30 = 2.000, 254.000
# span 31 = 32.7547, 36.4617
# span 32 = 32.7540, 36.4536
# span 33 = 20.8167, 26.8715
# span 34 = 20.8158, 26.8677
# span 35 = 116.629, 208.270
# span 36 = 118.866, 211.070
# span 37 = 11.1513, 27.6903
# span 38 = 11.1550, 27.6923
# span 39 = 1498.42, 1540.26
# span 40 = 1498.42, 1540.26
# span 41 = -0.091, 1.567
# span 42 = -0.150, 8.945
# span 43 = 14, 922
# span 44 = 0.0000e+00, 0.0000e+00
# interval = meters: 1
# start_time = May 08 2018 23:45:21 [System UTC, header]
# bad_flag = -9.990e-29
# <Sensors count="15" >
# <sensor Channel="1" >
# <!-- Frequency 0, Temperature -->
# <TemperatureSensor SensorID="55" >
# <SerialNumber>2902</SerialNumber>
# <CalibrationDate>11-Jan-18</CalibrationDate>
# <UseG_J>1</UseG_J>
# <A>0.00000000e+000</A>
# <B>0.00000000e+000</B>
# <C>0.00000000e+000</C>
# <D>0.00000000e+000</D>
# <F0_Old>0.000</F0_Old>
# <G>4.34453264e-003</G>
# <H>6.44771066e-004</H>
# <I>2.29206220e-005</I>
# <J>2.13330570e-006</J>
# <F0>1000.000</F0>
# <Slope>1.00000000</Slope>
# <Offset>0.0000</Offset>
```

```
# </TemperatureSensor>
# </sensor>
# <sensor Channel="2" >
# <!-- Frequency 1, Conductivity -->
# <ConductivitySensor SensorID="3" >
#   <SerialNumber>2469</SerialNumber>
#   <CalibrationDate>12-Jan-18</CalibrationDate>
#   <UseG_J>1</UseG_J>
#   <!-- Cell const and series R are applicable only for wide range sensors. -->
#   <SeriesR>0.0000</SeriesR>
#   <CellConst>2000.0000</CellConst>
#   <ConductivityType>0</ConductivityType>
#   <Coefficients equation="0" >
#     <A>0.00000000e+000</A>
#     <B>0.00000000e+000</B>
#     <C>0.00000000e+000</C>
#     <D>0.00000000e+000</D>
#     <M>0.0</M>
#     <CPcor>-9.57000000e-008</CPcor>
#   </Coefficients>
#   <Coefficients equation="1" >
#     <G>-9.83496168e+000</G>
#     <H>1.37102844e+000</H>
#     <I>-2.42649815e-003</I>
#     <J>2.40267625e-004</J>
#     <CPcor>-9.57000000e-008</CPcor>
#     <CTcor>3.2500e-006</CTcor>
#     <!-- WBOTC not applicable unless ConductivityType = 1. -->
#     <WBOTC>0.00000000e+000</WBOTC>
#   </Coefficients>
#   <Slope>1.00000000</Slope>
#   <Offset>0.00000</Offset>
# </ConductivitySensor>
# </sensor>
# <sensor Channel="3" >
# <!-- Frequency 2, Pressure, Digiquartz with TC -->
# <PressureSensor SensorID="45" >
#   <SerialNumber>0444</SerialNumber>
#   <CalibrationDate>20-Dec-16</CalibrationDate>
#   <C1>-5.378517e+004</C1>
#   <C2>-3.498580e-001</C2>
#   <C3>1.648580e-002</C3>
#   <D1>4.036100e-002</D1>
```

```
# <D2>0.000000e+000</D2>
# <T1>2.984744e+001</T1>
# <T2>-3.538190e-004</T2>
# <T3>3.972770e-006</T3>
# <T4>2.922330e-009</T4>
# <Slope>0.99989692</Slope>
# <Offset>-0.45761</Offset>
# <T5>0.000000e+000</T5>
# <AD590M>1.125800e-002</AD590M>
# <AD590B>-8.763490e+000</AD590B>
# </PressureSensor>
# </sensor>
# <sensor Channel="4" >
# <!-- Frequency 3, Temperature, 2 -->
# <TemperatureSensor SensorID="55" >
# <SerialNumber>2034</SerialNumber>
# <CalibrationDate>11-Jan-18</CalibrationDate>
# <UseG_J>1</UseG_J>
# <A>0.00000000e+000</A>
# <B>0.00000000e+000</B>
# <C>0.00000000e+000</C>
# <D>0.00000000e+000</D>
# <F0_Old>0.000</F0_Old>
# <G>4.41224800e-003</G>
# <H>6.40810109e-004</H>
# <I>2.34620587e-005</I>
# <J>2.22067977e-006</J>
# <F0>1000.000</F0>
# <Slope>1.00000000</Slope>
# <Offset>0.0000</Offset>
# </TemperatureSensor>
# </sensor>
# <sensor Channel="5" >
# <!-- Frequency 4, Conductivity, 2 -->
# <ConductivitySensor SensorID="3" >
# <SerialNumber>2459</SerialNumber>
# <CalibrationDate>12-Jan-18</CalibrationDate>
# <UseG_J>1</UseG_J>
# <!-- Cell const and series R are applicable only for wide range sensors. -->
# <SeriesR>0.0000</SeriesR>
# <CellConst>2000.0000</CellConst>
# <ConductivityType>0</ConductivityType>
# <Coefficients equation="0" >
```

```
# <A>0.00000000e+000</A>
# <B>0.00000000e+000</B>
# <C>0.00000000e+000</C>
# <D>0.00000000e+000</D>
# <M>0.0</M>
# <CPcor>-9.57000000e-008</CPcor>
# </Coefficients>
# <Coefficients equation="1" >
# <G>-1.02361744e+001</G>
# <H>1.50895334e+000</H>
# <I>-1.82498446e-004</I>
# <J>9.47468425e-005</J>
# <CPcor>-9.57000000e-008</CPcor>
# <CTcor>3.2500e-006</CTcor>
# <!-- WBOTC not applicable unless ConductivityType = 1. -->
# <WBOTC>0.00000000e+000</WBOTC>
# </Coefficients>
# <Slope>1.00000000</Slope>
# <Offset>0.00000</Offset>
# </ConductivitySensor>
# </sensor>
# <sensor Channel="6" >
# <!-- A/D voltage 0, Transmissometer, WET Labs C-Star -->
# <WET_LabsCStar SensorID="71" >
# <SerialNumber>593DR</SerialNumber>
# <CalibrationDate>07-Mar-18/#-Mar-18field</CalibrationDate>
# <M>19.2160</M>
# <B>-1.1145</B>
# <PathLength>0.250</PathLength>
# </WET_LabsCStar>
# </sensor>
# <sensor Channel="7" >
# <!-- A/D voltage 1, Fluorometer, WET Labs ECO-AFL/FL -->
# <FluoroWetlabECO_AFL_FL_Sensor SensorID="20" >
# <SerialNumber>478</SerialNumber>
# <CalibrationDate>02-Mar-18</CalibrationDate>
# <ScaleFactor>2.60000000e+001</ScaleFactor>
# <!-- Dark output -->
# <Vblank>0.0200</Vblank>
# </FluoroWetlabECO_AFL_FL_Sensor>
# </sensor>
# <sensor Channel="8" >
# <!-- A/D voltage 2, Altimeter -->
```


```
# <AltimeterSensor SensorID="0" >
#   <SerialNumber>49899</SerialNumber>
#   <CalibrationDate>30-Mar-15</CalibrationDate>
#   <ScaleFactor>15.000</ScaleFactor>
#   <Offset>0.000</Offset>
# </AltimeterSensor>
# </sensor>
# <sensor Channel="9" >
#   <!-- A/D voltage 3, PAR/Irradiance, Biospherical/Licor -->
#   <PAR_BiosphericalLicorChelseaSensor SensorID="42" >
#     <SerialNumber>70513</SerialNumber>
#     <CalibrationDate>07-Feb-2018</CalibrationDate>
#     <M>1.00000000</M>
#     <B>0.00000000</B>
#     <CalibrationConstant>11037527594.00000000</CalibrationConstant>
#     <ConversionUnits>1</ConversionUnits>
#     <Multiplier>1.00000000</Multiplier>
#     <Offset>-0.09188153</Offset>
#   </PAR_BiosphericalLicorChelseaSensor>
# </sensor>
# <sensor Channel="10" >
#   <!-- A/D voltage 4, Oxygen, SBE 43 -->
#   <OxygenSensor SensorID="38" >
#     <SerialNumber>1339</SerialNumber>
#     <CalibrationDate>29-Mar-18</CalibrationDate>
#     <Use2007Equation>1</Use2007Equation>
#     <CalibrationCoefficients equation="0" >
#       <!-- Coefficients for Owens-Millard equation. -->
#       <Boc>0.0000</Boc>
#       <Soc>0.0000e+000</Soc>
#       <offset>0.0000</offset>
#       <Pcor>0.00e+000</Pcor>
#       <Tcor>0.0000</Tcor>
#       <Tau>0.0</Tau>
#     </CalibrationCoefficients>
#     <CalibrationCoefficients equation="1" >
#       <!-- Coefficients for Sea-Bird equation - SBE calibration in 2007 and later. -->
#       <Soc>5.5279e-001</Soc>
#       <offset>-0.4878</offset>
#       <A>-4.7632e-003</A>
#       <B> 1.8416e-004</B>
#       <C>-2.8285e-006</C>
#       <D0> 2.5826e+000</D0>
```



```
# <D1> 1.92634e-004</D1>
# <D2>-4.64803e-002</D2>
# <E> 3.6000e-002</E>
# <Tau20> 1.3800</Tau20>
# <H1>-3.3000e-002</H1>
# <H2> 5.0000e+003</H2>
# <H3> 1.4500e+003</H3>
# </CalibrationCoefficients>
# </OxygenSensor>
# </sensor>
# <sensor Channel="11" >
# <!-- A/D voltage 5, Oxygen, SBE 43, 2 -->
# <OxygenSensor SensorID="38" >
# <SerialNumber>0348</SerialNumber>
# <CalibrationDate>29-Mar-18</CalibrationDate>
# <Use2007Equation>1</Use2007Equation>
# <CalibrationCoefficients equation="0" >
# <!-- Coefficients for Owens-Millard equation. -->
# <Boc>0.0000</Boc>
# <Soc>0.0000e+000</Soc>
# <offset>0.0000</offset>
# <Pcor>0.00e+000</Pcor>
# <Tcor>0.0000</Tcor>
# <Tau>0.0</Tau>
# </CalibrationCoefficients>
# <CalibrationCoefficients equation="1" >
# <!-- Coefficients for Sea-Bird equation - SBE calibration in 2007 and later. -->
# <Soc>4.4348e-001</Soc>
# <offset>-0.4795</offset>
# <A>-4.0215e-003</A>
# <B> 2.3984e-004</B>
# <C>-3.4036e-006</C>
# <D0> 2.5826e+000</D0>
# <D1> 1.92634e-004</D1>
# <D2>-4.64803e-002</D2>
# <E> 3.6000e-002</E>
# <Tau20> 1.2000</Tau20>
# <H1>-3.3000e-002</H1>
# <H2> 5.0000e+003</H2>
# <H3> 1.4500e+003</H3>
# </CalibrationCoefficients>
# </OxygenSensor>
# </sensor>
```

```
# <sensor Channel="12" >
# <!-- A/D voltage 6, User Polynomial -->
# <UserPolynomialSensor SensorID="61" >
#   <SerialNumber>783</SerialNumber>
#   <CalibrationDate>28-Jul-2016</CalibrationDate>
#   <SensorName>SUNA</SensorName>
#   <A0>-6.80600000</A0>
#   <A1>24.79800000</A1>
#   <A2>0.00000000</A2>
#   <A3>0.00000000</A3>
# </UserPolynomialSensor>
# </sensor>
# <sensor Channel="13" >
# <!-- A/D voltage 7, Free -->
# </sensor>
# <sensor Channel="14" >
# <!-- SPAR voltage, Unavailable -->
# </sensor>
# <sensor Channel="15" >
# <!-- SPAR voltage, SPAR, Biospherical/Licor -->
# <SPAR_Sensor SensorID="51" >
#   <SerialNumber>20190</SerialNumber>
#   <CalibrationDate>07-Feb-2018</CalibrationDate>
#   <ConversionUnits>1</ConversionUnits>
#   <ConversionFactor>1.5487e+003</ConversionFactor>
#   <RatioMultiplier>1.00000000</RatioMultiplier>
# </SPAR_Sensor>
# </sensor>
# </Sensors>
# datchv_date = May 27 2018 21:10:02, 7.26.7.114 [datchv_vars = 30]
# datchv_in = D:\CTD\raw\614_003_03.hex D:\CTD\raw\614_003_03.XMLCON
# datchv_skipover = 0
# datchv_ox_hysteresis_correction = yes
# filter_date = May 27 2018 21:10:14, 7.26.7.114
# filter_in = D:\CTD\proc\614_003_03.cnv
# filter_low_pass_tc_A = 0.030
# filter_low_pass_tc_B = 0.150
# filter_low_pass_A_vars =
# filter_low_pass_B_vars = prDM depSM
# alignctd_date = May 27 2018 21:10:16, 7.26.7.114
# alignctd_in = D:\CTD\proc\614_003_03.cnv
# alignctd_adv = c1S/m 0.073, v4 4.000, sbeox0V 4.000, v5 4.000, sbeox1V 4.000
# celltm_date = May 27 2018 21:10:18, 7.26.7.114
```

```
# celltm_in = D:\CTD\proc\614_003_03.cnv
# celltm_alpha = 0.0300, 0.0300
# celltm_tau = 7.0000, 7.0000
# celltm_temp_sensor_use_for_cond = primary, secondary
# Derive_date = May 27 2018 21:10:19, 7.26.7.114 [derive_vars = 13]
# Derive_in = D:\CTD\proc\614_003_03.cnv D:\CTD\proc\614_003_03.XMLCON
# derive_time_window_docdt = seconds: 2
# derive_ox_tau_correction = yes
# derive_time_window_dzdt = seconds: 2
# binavg_date = May 27 2018 21:10:23, 7.26.7.114
# binavg_in = D:\CTD\proc\614_003_03.cnv
# binavg_bintype = meters
# binavg_binsize = 1
# binavg_excl_bad_scans = yes
# binavg_skipover = 0
# binavg_omit = 0
# binavg_min_scans_bin = 1
# binavg_max_scans_bin = 2147483647
# binavg_surface_bin = yes, min = 0.000, max = 0.000, value = 0.000
# file_type = binary
*END*
```



Formulas used

en614-Prof

1

FileName	Cruise	Station	StnEvent	BottleID
	en586	#VALUE!	#VALUE!	#VALUE!

DateParser	Jul 24 2016
	7/24/2016

TimeParser	15:15:43
	15:15

JD->ODV	139.96739	#####
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