

# Sea-Bird Electronics, Inc.

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SENSOR SERIAL NUMBER: 0042  
CALIBRATION DATE: 03-May-13

SBE 49 TEMPERATURE CALIBRATION DATA  
ITS-90 TEMPERATURE SCALE

## ITS-90 COEFFICIENTS

a0 = 6.973450e-004  
a1 = 3.239442e-004  
a2 = -6.262367e-006  
a3 = 3.507807e-007

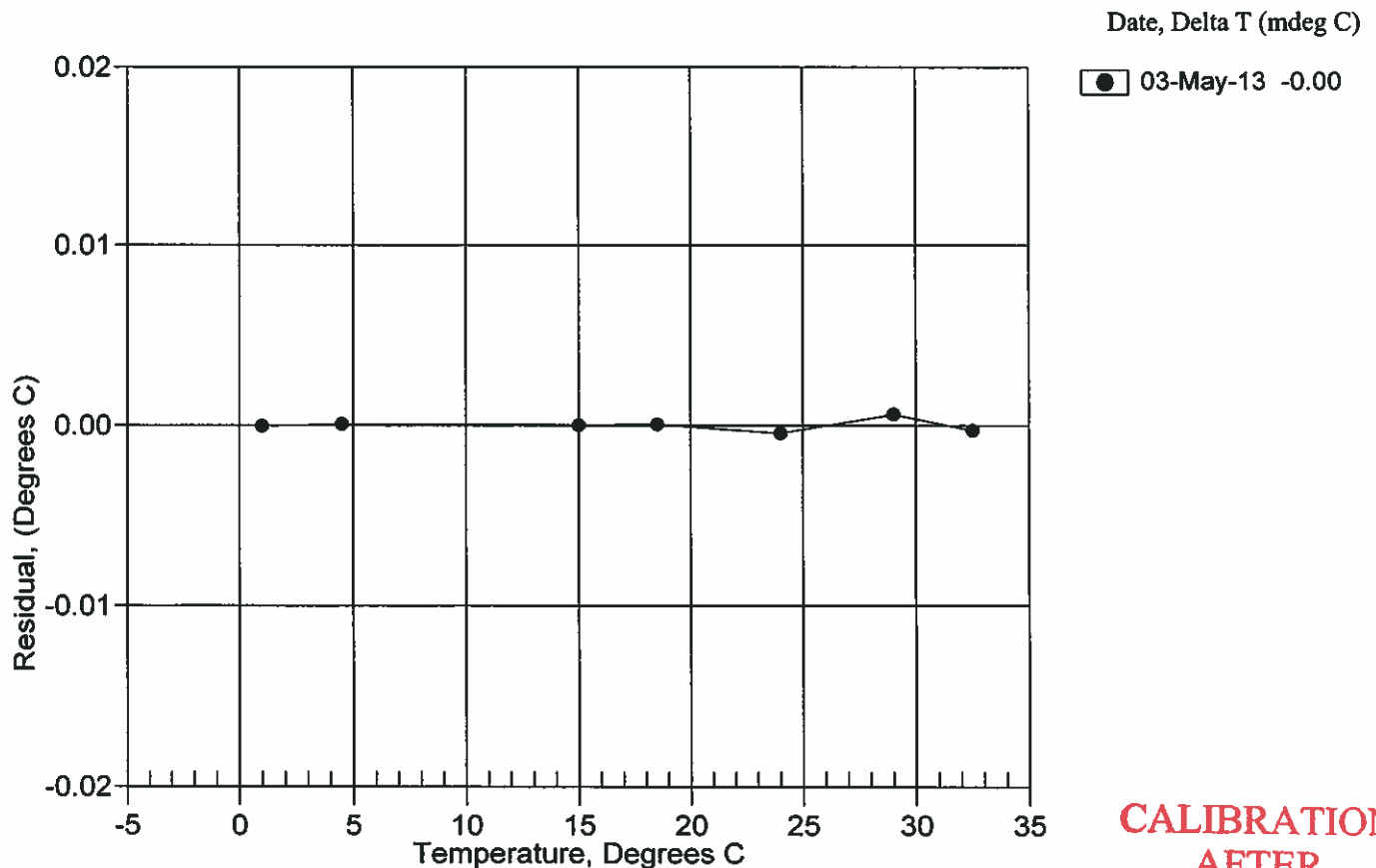
| BATH TEMP<br>(ITS-90) | INSTRUMENT<br>OUTPUT(n) | INST TEMP<br>(ITS-90) | RESIDUAL<br>(ITS-90) |
|-----------------------|-------------------------|-----------------------|----------------------|
| 1.0000                | 698810.678              | 1.0000                | -0.0000              |
| 4.5000                | 617648.000              | 4.5000                | 0.0000               |
| 15.0000               | 412655.339              | 15.0000               | 0.0000               |
| 18.5000               | 356660.153              | 18.5001               | 0.0001               |
| 24.0000               | 279926.186              | 23.9996               | -0.0004              |
| 29.0061               | 220829.898              | 29.0067               | 0.0006               |
| 32.5119               | 184868.458              | 32.5116               | -0.0003              |

$$MV = (n - 524288) / 1.6e+007$$

$$R = (MV * 2.295e+010 + 9.216e+008) / (6.144e+004 - MV * 5.3e+005)$$

$$\text{Temperature ITS-90} = 1 / \{a_0 + a_1[\ln(R)] + a_2[\ln^2(R)] + a_3[\ln^3(R)]\} - 273.15 \text{ (}^\circ\text{C)}$$

$$\text{Residual} = \text{instrument temperature} - \text{bath temperature}$$



**CALIBRATION  
AFTER  
MODIFICATIONS**