LSNReviews

From: Alka Jain [ajain@cnwra.swri.edu]
Sent: Thursday, August 03, 2006 10:30 AM
To: Don Bannon
Attachments: lab notebook.doc; T_CAL_REGRESSION_APR13-26, 2006.xls; T_CAL_REGRESSION_APR15-16, 2004.xls

Please save the attachments.

Alka

Properties Page

Return-path: <ajain@cnwra.swri.edu>
Received: from stu2571 ([129.162.200.105])
by rogain.cnwra.swri.edu (Sun ONE Messaging Server 6.0 (built Oct 29 2003))
with ESMTP id <0J3F004IEEYOUW60@rogain.cnwra.swri.edu> for
dbannon@cnwra.swri.edu; Thu, 03 Aug 2006 09:30:26 -0500 (CDT)
Date: Thu, 03 Aug 2006 09:30:24 -0500
From: Alka Jain <ajain@cnwra.swri.edu>
Subject:
To: Don Bannon <dbannon@cnwra.swri.edu>
Reply-to: ajain@cnwra.swri.edu
Message-id: <000001c6b709$5b8e5100$69c8a281@cnwra.swri.edu>
Organization: CNWRA
MIME-version: 1.0
X-MIMEOLE: Produced By Microsoft MimeOLE V6.00.2900.2670
X-Mailer: Microsoft Outlook, Build 10.0.6626
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boundary="----=_NextPart_000_0001_01C6B6DF.72B84900"
Importance: Normal
X-Priority: 3 (Normal)
X-MSMail-priority: Normal
Original-recipient: rfc822;dbannon@cnwra.swri.edu

AJ, May15, 2006

Calibration of Thermocouples

Equipment and Supplies:

1. Calibrated glass-mercury thermometer (range: 0-50^{0}C, graduations: 0.1^{0}C, S/N 1709, AN 007617, calibration date: July 14, 2005; calibration due: July 14, 2006)
2. 39 Type T self adhesive thermocouples (Omega Engineering Inc., model SA1-T-72)
3. 60 type non adhesive thermocouples (Omega Engineering Inc., model 5SC-TT-T-30-72)
4. 20 5K-ohm thermistors (Omega Engineering Inc., model ON-901-44007)
5. Thermocouple connectors (Omega Engineering Inc., model SMP-T-F and model SMP-T-MF)
6. Corning stirrer hot plate
7. Magnetic stirrer
8. HP 34970A Data Acquisition/Switch Unit including three channel data logger cards (S/N MY44010920, AN 012033, calibration date: Jan. 27, 2006; cal. due: Jan. 26, 2007)
9. HP Bench Link Data Logger Software, version 1.1, 1997
10. Thermocouple wire (Omega Engineering Inc., model TT-T-24SLE, lot #'s ICP 12629PTCC012827P, ICP12794P IHC013000P)
11. One 3.5L glass beaker
12. DI Water

Procedure:

99 Type T thermocouples (39 adhesive and 60 non adhesive) and 20 5K-ohm thermistors are placed in 3.5L glass beaker more than half filled with DI water. The beaker is placed on hot plate and water is continuously stirred using magnetic stirrer to maintain uniform temperature. Various temperature settings were obtained by adding cold and hot water. The beaker was insulated with layers of bubble wrap and paper towel. The hot plate is kept warm for higher temperature settings in order to maintain constant temperatures during measurements. Several temperature measurements were taken between 20^{0}C and 50^{0}C.

Allow water bath to stabilize and collect 17 temperature measurements per thermocouple and per thermistor in rapid fashion, within 10 seconds using automated data logger. Raise the water temperature to next temperature setting, allow temperature to stabilize, collect 17 temperature measurements per thermocouple and per thermistor, and so on until the entire range is represented. Increments of temperature at each step are approximately 4^{0}C. Average temperature is calculated for each thermocouple and thermistor at all temperature settings and recorded. These data points are plotted against standard temperature settings to generate regression curve. The computed slopes and intercepts (offset) are utilized for temperature correction (see attached data Table 1).

TABLE1: Channel Number, Corresponding Thermocouple/Thermistor and Corresponding Slope and Intercept Configuration in HP Data Logger

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Calculation of regression values used to correct thermocouple readings for coldtrap experiment.

Conducted on April 13, 2006

Thermocouple check

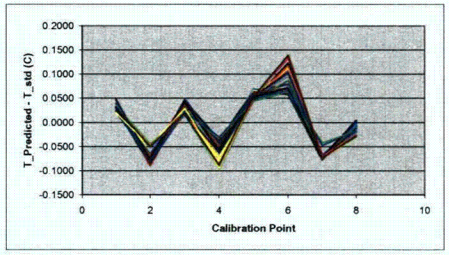
Thermometer reading oC	Thermocouple no. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
* 20.10	16.5228	17.0328	16.8958	17.3800	17.4568	18.1938	18.8698	18.0839	18.2513	18.3944	18.5017	18.7411	18.7253	18.0766	18.1602	18.1942	18.2116	18.2236	17.6316	17.6277	16.7136	16.8828	17.0629	17.3608	17.0563	17.7643	18.8091	18.1638	18.3626
* 22.50	18.8198	19.3387	19.1954	19.6748	19.7586	20.4843	21.1577	20.3674	20.5541	20.6978	20.7904	21.0274	21.0203	20.3904	20.4611	20.4833	20.5108	20.5297	19.9596	19.9498	19.0028	19.1944	19.3772	19.6521	19.3391	20.0664	21.0938	20.4496	20.6328
* 25.50	21.9222	22.4485	22.2867	22.7870	22.8729	23.6183	24.2795	23.4799	23.6827	23.8224	23.9215	24.1535	24.1523	23.5088	23.5708	23.5975	23.6375	23.6375	23.0263	23.0257	22.1053	22.3042	22.4819	22.7649	22.4482	23.1886	24.2284	23.5768	23.7655
* 30.50	26.8661	27.3725	27.2133	27.7193	27.8033	28.5337	29.2017	28.4007	28.6170	28.7391	28.8319	29.0749	29.0703	28.4197	28.4837	28.5091	28.5475	28.5463	27.9291	27.9252	27.0447	27.2309	27.3984	27.6863	27.3832	28.1125	29.1471	28.4867	28.6833
* 35.50	31.9895	32.5023	32.3563	32.8460	32.9183	33.6539	34.3186	33.5249	33.7159	33.8379	33.9491	34.1899	34.1747	33.5274	33.6021	33.6258	33.6575	33.6564	33.0855	33.0859	32.1817	32.3532	32.5217	32.8154	32.5166	33.2143	34.2485	33.6120	33.8049
* 40.50	37.0897	37.5791	37.4343	37.9092	37.9875	38.6786	39.3140	38.5487	38.7438	38.8600	38.9559	39.1873	39.1847	38.5655	38.6313	38.6530	38.6984	38.6865	38.1926	38.1807	37.2687	37.4455	37.5933	37.8707	37.5850	38.2619	39.2472	38.6337	38.8203
* 45.50	41.9184	42.4172	42.2723	42.7516	42.8237	43.5302	44.1807	43.4011	43.6100	43.7179	43.8259	44.0551	44.0525	43.4275	43.4959	43.5135	43.5619	43.5455	42.9925	42.9847	42.1002	42.2774	42.4340	42.7157	42.4250	43.1104	44.1132	43.4977	43.6841
* 50.00	46.4799	46.9839	46.8352	47.3197	47.3919	48.1067	48.7585	47.9788	48.1861	48.2985	48.4074	48.6404	48.6276	48.0063	48.0793	48.0909	48.1502	48.1240	47.5513	47.5431	46.6727	46.8350	46.9915	47.2935	47.0032	47.6838	48.6962	48.0792	48.2661
Intercept	3.6864	3.1589	3.3066	2.8115	2.7224	1.9653	1.2750	2.0806	1.9099	1.7449	1.6524	1.4093	1.4185	2.0789	2.0051	1.9659	1.9609	1.9236	2.5505	2.5517	3.5035	3.3064	3.1083	2.8270	3.1528	2.3940	1.3283	2.0061	1.8103
Slope	0.9959	0.9966	0.9966	0.9969	0.9972	0.9983	0.9993	0.9987	0.9979	0.9991	0.9988	0.9991	0.9990	0.9982	0.9983	0.9988	0.9978	0.9991	0.9973	0.9975	0.9958	0.9964	0.9974	0.9973	0.9964	0.9982	0.9996	0.9982	0.9984

Difference between the corrected temperature reading and the standard thermometer reading. Corrected Temperature Reading (applied Slope and Offset to the above reading).

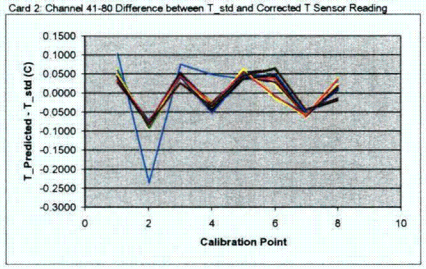
0.0408	0.0330	0.0441	0.0369	0.0306	0.0289	0.0316	0.0410	0.0226	0.0230	0.0323	0.0328	0.0253	0.0232	0.0349	0.0391	0.0323	0.0302	0.0348	0.0346	0.0471	0.0288	0.0276	0.0406	0.0481	0.0262	0.0294	0.0379	0.0441
-0.0716	-0.0690	-0.0641	-0.0755	-0.0740	-0.0844	-0.0820	-0.0785	-0.0794	-0.0757	-0.0817	-0.0831	-0.0820	-0.0671	-0.0680	-0.0745	-0.0735	-0.0659	-0.0436	-0.0493	-0.0733	-0.0679	-0.0640	-0.0744	-0.0772	-0.0759	-0.0868	-0.0804	-0.0894
0.0179	0.0301	0.0165	0.0270	0.0317	0.0445	0.0376	0.0299	0.0425	0.0462	0.0457	0.0401	0.0470	0.0457	0.0365	0.0361	0.0463	0.0390	0.0150	0.0188	0.0163	0.0308	0.0329	0.0300	0.0207	0.0407	0.0464	0.0414	0.0384
-0.0587	-0.0629	-0.0739	-0.0562	-0.0515	-0.0483	-0.0435	-0.0557	-0.0336	-0.0414	-0.0497	-0.0432	-0.0399	-0.0521	-0.0588	-0.0580	-0.0546	-0.0568	-0.0954	-0.0941	-0.0650	-0.0601	-0.0632	-0.0621	-0.0619	-0.0443	-0.0369	-0.0574	-0.0514
0.0436	0.0493	0.0515	0.0544	0.0492	0.0635	0.0698	0.0619	0.0545	0.0528	0.0615	0.0670	0.0595	0.0464	0.0510	0.0528	0.0441	0.0485	0.0472	0.0535	0.0504	0.0439	0.0471	0.0531	0.0531	0.0483	0.0623	0.0589	0.0621
0.1226	0.1085	0.1119	0.1017	0.1044	0.0799	0.0617	0.0792	0.0718	0.0704	0.0624	0.0597	0.0645	0.0755	0.0719	0.0742	0.0739	0.0739	0.1405	0.1353	0.1162	0.1180	0.1057	0.0946	0.1034	0.0868	0.0589	0.0718	0.0696
-0.0686	-0.0700	-0.0666	-0.0711	-0.0729	-0.0766	-0.0749	-0.0748	-0.0723	-0.0759	-0.0733	-0.0771	-0.0725	-0.0712	-0.0716	-0.0709	-0.0733	-0.0716	-0.0725	-0.0729	-0.0725	-0.0674	-0.0660	-0.0736	-0.0739	-0.0735	-0.0772	-0.0728	-0.0741
-0.0260	-0.0190	-0.0195	-0.0173	-0.0174	-0.0076	-0.0003	-0.0030	-0.0060	0.0006	0.0028	0.0039	-0.0019	-0.0005	0.0040	0.0012	0.0048	0.0026	-0.0259	-0.0260	-0.0192	-0.0261	-0.0200	-0.0082	-0.0121	-0.0084	0.0039	0.0006	0.0007

List Maximum Diff (T_sensor- T_std) (only list if >0.1 C)	0.123	0.109	0.112	0.102	0.104														0.141	0.135	0.116	0.118	0.106		0.103				

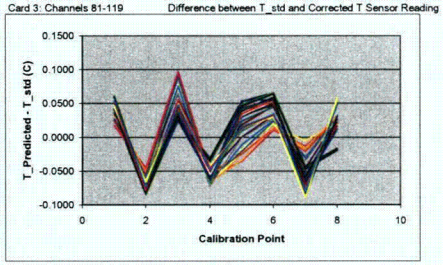
Card 1: Channel 1-40 Difference between T_std and Corrected T Sensor Reading



Card 2: Channel 41-80 Difference between T_std and Corrected T Sensor Reading



Card 3: Channels 81-119 Difference between T_std and Corrected T Sensor Reading



Removed Calibration Point at 40.5 C, it looked bad (taken on April 13)
Added new data for Calibration Point at 40.5 C (taken on April 21)
Added new data for CH 209 only at 22.5 C calibration point (taken on April 21)

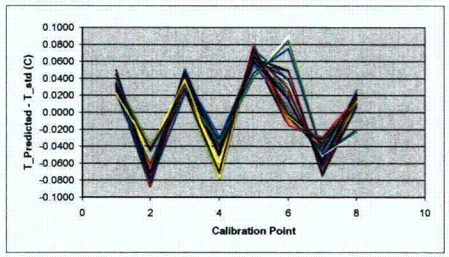
Thermometer reading oC	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
* 20.10	16.5228	17.0328	16.8958	17.3800	17.4568	18.1938	18.8698	18.0839	18.2513	18.3944	18.5017	18.7411	18.7253	18.0766	18.1602	18.1942	18.2116	18.2236	17.6316	17.6277	16.7136	16.8828	17.0629	17.3608	17.0563	17.7643	18.8091	18.1638	18.3626
New data @ 22.5 for CH 209 22.50	18.8198	19.3387	19.1954	19.6748	19.7586	20.4843	21.1577	20.3674	20.5541	20.6978	20.7904	21.0274	21.0203	20.3904	20.4611	20.4833	20.5108	20.5297	19.9596	19.9498	19.0028	19.1944	19.3772	19.6521	19.3391	20.0664	21.0938	20.4496	20.6328
25.50	21.9222	22.4485	22.2867	22.7870	22.8729	23.6183	24.2795	23.4799	23.6827	23.8224	23.9215	24.1535	24.1523	23.5088	23.5708	23.5975	23.6375	23.6375	23.0263	23.0257	22.1053	22.3042	22.4819	22.7649	22.4482	23.1886	24.2284	23.5768	23.7655
* 30.50	26.8661	27.3725	27.2133	27.7193	27.8033	28.5337	29.2017	28.4007	28.6170	28.7391	28.8319	29.0749	29.0703	28.4197	28.4837	28.5091	28.5475	28.5463	27.9291	27.9252	27.0447	27.2309	27.3984	27.6863	27.3832	28.1125	29.1471	28.4867	28.6833
* 35.50	31.9895	32.5023	32.3563	32.8460	32.9183	33.6539	34.3186	33.5249	33.7159	33.8379	33.9491	34.1899	34.1747	33.5274	33.6021	33.6258	33.6575	33.6564	33.0855	33.0859	32.1817	32.3532	32.5217	32.8154	32.5166	33.2143	34.2485	33.6120	33.8049
* 40.50	36.9211	37.4467	37.2938	37.7928	37.8831	38.6141	39.2861	38.4788	38.6971	38.7996	38.9111	39.1557	39.1538	38.4891	38.5558	38.5822	38.6148	38.6239	38.0223	38.0080	37.1140	37.3082	37.4722	37.7615	37.4520	38.1843	39.2353	38.5643	38.7689
* 45.50	41.9184	42.4172	42.2723	42.7516	42.8237	43.5302	44.1807	43.4011	43.6100	43.7179	43.8259	44.0551	44.0525	43.4275	43.4959	43.5135	43.5619	43.5455	42.9925	42.9847	42.1002	42.2774	42.4340	42.7157	42.4250	43.1104	44.1132	43.4977	43.6841
* 50.00	46.4799	46.9839	46.8352	47.3197	47.3919	48.1067	48.7585	47.9788	48.1861	48.2985	48.4074	48.6404	48.6276	48.0063	48.0793	48.0909	48.1502	48.1240	47.5513	47.5431	46.6727	46.8350	46.9915	47.2935	47.0032	47.6838	48.6962	48.0792	48.2661
Intercept	3.6663	3.1426	3.2894	2.7968	2.7090	1.9567	1.2711	2.0714	1.9037	1.7368	1.6464	1.4050	1.4143	2.0689	1.9951	1.9565	1.9499	1.9153	2.5284	2.5294	3.4848	3.2895	3.0932	2.8133	3.1364	2.3840	1.3266	1.9969	1.8034
Slope	0.9972	0.9976	0.9977	0.9978	0.9981	0.9989	0.9995	0.9993	0.9983	0.9996	0.9992	0.9993	0.9993	0.9988	0.9989	0.9994	0.9985	0.9996	0.9987	0.9989	0.9971	0.9975	0.9984	0.9982	0.9975	0.9988	0.9997	0.9988	0.9988

Difference between the corrected temperature reading and the standard thermometer reading. Corrected Temperature Reading (applied Slope and Offset to the above reading).

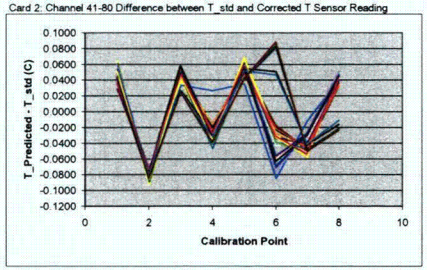
0.0432	0.0349	0.0461	0.0386	0.0321	0.0298	0.0320	0.0420	0.0233	0.0239	0.0329	0.0332	0.0257	0.0243	0.0361	0.0401	0.0335	0.0311	0.0371	0.0370	0.0494	0.0307	0.0293	0.0422	0.0500	0.0273	0.0296	0.0389	0.0448
-0.0661	-0.0647	-0.0595	-0.0717	-0.0706	-0.0823	-0.0811	-0.0762	-0.0779	-0.0737	-0.0802	-0.0820	-0.0810	-0.0646	-0.0655	-0.0721	-0.0708	-0.0638	-0.0380	-0.0436	-0.0682	-0.0634	-0.0600	-0.0708	-0.0729	-0.0733	-0.0864	-0.0781	-0.0877
0.0277	0.0378	0.0246	0.0337	0.0377	0.0482	0.0392	0.0340	0.0452	0.0497	0.0483	0.0419	0.0488	0.0502	0.0409	0.0402	0.0512	0.0426	0.0248	0.0288	0.0252	0.0388	0.0399	0.0363	0.0284	0.0452	0.0471	0.0454	0.0414
-0.0422	-0.0500	-0.0601	-0.0448	-0.0413	-0.0420	-0.0408	-0.0488	-0.0291	-0.0355	-0.0453	-0.0401	-0.0369	-0.0446	-0.0514	-0.0511	-0.0464	-0.0507	-0.0788	-0.0772	-0.0499	-0.0467	-0.0514	-0.0514	-0.0489	-0.0366	-0.0357	-0.0506	-0.0464
0.0670	0.0677	0.0711	0.0706	0.0637	0.0725	0.0737	0.0717	0.0610	0.0613	0.0678	0.0714	0.0638	0.0571	0.0616	0.0627	0.0557	0.0573	0.0709	0.0776	0.0720	0.0630	0.0639	0.0683	0.0716	0.0591	0.0639	0.0686	0.0692
-0.0151	0.0003	-0.0029	0.0066	0.0189	0.0271	0.0389	0.0219	0.0336	0.0209	0.0257	0.0338	0.0392	0.0130	0.0100	0.0162	0.0055	0.0226	0.0012	-0.0059	-0.0102	0.0058	0.0066	0.0053	-0.0053	0.0233	0.0492	0.0149	0.0276
-0.0317	-0.0410	-0.0358	-0.0455	-0.0499	-0.0624	-0.0688	-0.0595	-0.0621	-0.0627	-0.0635	-0.0701	-0.0657	-0.0544	-0.0551	-0.0554	-0.0550	-0.0578	-0.0350	-0.0349	-0.0386	-0.0373	-0.0394	-0.0497	-0.0448	-0.0565	-0.0746	-0.0576	-0.0629
0.0171	0.0149	0.0165	0.0125	0.0094	0.0089	0.0068	0.0149	0.0060	0.0161	0.0142	0.0120	0.0060	0.0191	0.0234	0.0194	0.0262	0.0187	0.0178	0.0183	0.0204	0.0091	0.0110	0.0198	0.0219	0.0115	0.0069	0.0184	0.0138

List Maximum Diff (T_sensor- T_std) (only list if >0.1 C)

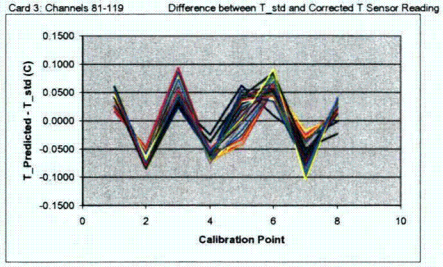
Card 1: Channel 1-40 Difference between T_std and Corrected T Sensor Reading



Card 2: Channel 41-80 Difference between T_std and Corrected T Sensor Reading



Card 3: Channels 81-119 Difference between T_std and Corrected T Sensor Reading



30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62
18.4484	18.6197	18.2793	20.1080		20.1106	20.1204	17.7231	17.6712	17.6329	17.6208	16.8226	17.1101	17.2298	17.4329	17.5213	18.2284	18.2034	18.0638	18.3355	18.4485	18.5589	18.1298	18.1188	18.1038	18.1613	18.1676	18.1848	17.7472	17.6988	17.6841	16.8343	17.0059
20.7501	20.9141	20.5761	22.3753		22.3779	22.3882	20.0587	19.9954	19.9525	19.9454	19.1053	19.3780	19.4744	19.7156	19.8197	20.5035	20.4557	20.3536	20.4070	20.7288	20.8248	20.4022	20.4011	20.3825	20.4238	20.4536	20.4751	20.0240	19.9605	19.9493	19.1257	19.2950
23.8719	24.0462	23.6961	25.4717		25.4746	25.4818	23.1447	23.0675	23.0277	23.0201	22.2413	22.5151	22.6089	22.8520	22.9546	23.6397	23.5929	23.4699	23.7369	23.8621	23.9580	23.5358	23.5303	23.5223	23.5463	23.5728	23.6035	23.1445	23.0875	23.0715	22.2509	22.4282
28.7897	28.9584	28.6033	30.3982		30.4015	30.4095	28.0444	27.9767	27.9379	27.9276	27.1737	27.4348	27.5333	27.7777	27.8768	28.5637	28.5073	28.3932	28.7370	28.7692	28.8754	28.4592	28.4432	28.4344	28.4588	28.4995	28.5251	28.0574	28.0011	27.9861	27.1944	27.3559
33.8853	34.0656	33.7170	35.4572		35.4632	35.4681	33.1927	33.1325	33.0963	33.0798	32.2490	32.5337	32.6417	32.8563	32.9559	33.6571	33.6226	33.4861	33.7527	33.8781	33.9871	33.5585	33.5363	33.5279	33.5621	33.5950	33.6169	33.1503	33.1029	33.0843	32.2671	32.4333
38.9033	39.0704	38.7432	40.4609		40.4670	40.4662	38.2893	38.2225	38.1961	38.1785	37.2389	37.5179	37.6147	37.8483	37.9505	38.6550	38.6268	38.4902	38.7809	38.8849	38.9869	38.5727	38.5553	38.5407	38.5705	38.6087	38.6357	38.0818	38.0268	38.0067	37.2748	37.4424
43.7595	43.9439	43.6041	45.3353		45.3441	45.3339	43.0916	43.0330	42.9975	42.9781	42.1555	42.4314	42.5356	42.7638	42.8681	43.5627	43.5307	43.3981	43.7199	43.7895	43.8817	43.4855	43.4587	43.4460	43.4651	43.5178	43.5341	43.0329	42.9757	42.9467	42.1837	42.3493
48.3378	48.5172	48.1873	49.8478		49.8560	49.8459	47.6452	47.5836	47.5540	47.5362	46.7430	47.0237	47.1259	47.3465	47.4529	48.1491	48.1116	47.9759	48.2783	48.3701	48.4657	48.0614	48.0342	48.0238	48.0399	48.0967	48.1131	47.6180	47.5702	47.5455	46.7695	46.9322
1.6824	1.5218	1.8761	-0.0342		-0.0317	-0.0588	2.4408	2.5055	2.5534	2.5550	3.3341	3.0597	2.9540	2.7221	2.6311	1.9432	1.9899	2.0993	1.9680	1.7270	1.6182	2.0610	2.0524	2.0674	2.0073	2.0124	1.9852	2.3858	2.4449	2.4487	3.3306	3.1545
0.9996	0.9992	0.9988	1.0034		1.0032	1.0039	0.9975	0.9975	0.9971	0.9975	0.9988	0.9987	0.9988	0.9989	0.9986	0.9984	0.9982	0.9987	0.9946	0.9983	0.9985	0.9977	0.9984	0.9983	0.9993	0.9980	0.9982	1.0006	1.0005	1.0009	0.9982	0.9985
0.0233	0.0264	0.0328	0.0424		0.0430	0.0404	0.0205	0.0325	0.0355	0.0317	0.0358	0.0474	0.0631	0.0361	0.0278	0.0426	0.0597	0.0399	0.1037	0.0434	0.0494	0.0485	0.0428	0.0412	0.0553	0.0436	0.0365	0.0441	0.0519	0.0495	0.0342	0.0342
-0.0760	-0.0811	-0.0732	-0.0825		-0.0825	-0.0829	-0.0497	-0.0491	-0.0517	-0.0496	-0.0843	-0.0877	-0.0950	-0.0837	-0.0769	-0.0859	-0.0922	-0.0732	-0.2361	-0.0803	-0.0881	-0.0844	-0.0784	-0.0838	-0.0839	-0.0751	-0.0774	-0.0776	-0.0852	-0.0832	-0.0786	-0.0802
0.0445	0.0485	0.0430	0.0244		0.0241	0.0229	0.0287	0.0154	0.0147	0.0174	0.0478	0.0453	0.0357	0.0493	0.0536	0.0454	0.0393	0.0392	0.0757	0.0476	0.0405	0.0419	0.0459	0.0508	0.0363	0.0379	0.0451	0.0449	0.0433	0.0419	0.0409	0.0481
-0.0397	-0.0433	-0.0559	-0.0323		-0.0333	-0.0301	-0.0836	-0.0877	-0.0893	-0.0873	-0.0258	-0.0414	-0.0458	-0.0303	-0.0311	-0.0384	-0.0555	-0.0439	0.0486	-0.0539	-0.0495	-0.0462	-0.0489	-0.0453	-0.0547	-0.0453	-0.0423	-0.0392	-0.0409	-0.0388	-0.0246	-0.0317
0.0538	0.0597	0.0515	0.0440		0.0445	0.0484	0.0521	0.0552	0.0543	0.0520	0.0431	0.0508	0.0565	0.0427	0.0409	0.0468	0.0504	0.0424	0.0370	0.0461	0.0547	0.0412	0.0363	0.0398	0.0449	0.0400	0.0401	0.0569	0.0633	0.0642	0.0388	0.0378
0.0697	0.0604	0.0715	0.0648		0.0642	0.0660	0.1362	0.1325	0.1393	0.1380	0.0269	0.0284	0.0236	0.0293	0.0286	0.0368	0.0454	0.0401	0.0378	0.0442	0.0469	0.0437	0.0474	0.0443	0.0495	0.0436	0.0496	-0.0085	-0.0105	-0.0087	0.0373	0.0392
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0.0004	-0.0005	0.0040	-0.0164		-0.0169	-0.0175	-0.0309	-0.0298	-0.0297	-0.0278	0.0192	0.0218	0.0233	0.0172	0.0177	0.0158	0.0126	0.0137	-0.0165	0.0128	0.0116	0.0103	0.0115	0.0117	0.0120	0.0126	0.0096	0.0337	0.0374	0.0391	0.0147	0.0143
							0.136	0.132	0.139	0.138									0.236													

30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62
18.4484	18.6197	18.2793	20.1080		20.1106	20.1204	17.7231	17.6712	17.6329	17.6208	16.8226	17.1101	17.2298	17.4329	17.5213	18.2284	18.2034	18.0638	18.3355	18.4485	18.5589	18.1298	18.1188	18.1038	18.1613	18.1676	18.1848	17.7472	17.6988	17.6841	16.8343	17.0059
20.7501	20.9141	20.5761	22.3753		22.3779	22.3882	20.0587	19.9954	19.9525	19.9454	19.1053	19.3780	19.4744	19.7156	19.8197	20.5035	20.4557	20.3536	20.6206	20.7288	20.8248	20.4022	20.4011	20.3825	20.4238	20.4536	20.4751	20.0240	19.9605	19.9493	19.1257	19.2950
23.8719	24.0462	23.6961	25.4717		25.4746	25.4818	23.1447	23.0675	23.0277	23.0201	22.2413	22.5151	22.6089	22.8520	22.9546	23.6397	23.5929	23.4699	23.7369	23.8621	23.9580	23.5358	23.5303	23.5223	23.5463	23.5728	23.6035	23.1445	23.0875	23.0715	22.2509	22.4282
28.7897	28.9584	28.6033	30.3982		30.4015	30.4095	28.0444	27.9767	27.9379	27.9276	27.1737	27.4348	27.5333	27.7777	27.8768	28.5637	28.5073	28.3932	28.7370	28.7692	28.8754	28.4592	28.4432	28.4344	28.4588	28.4995	28.5251	28.0574	28.0011	27.9861	27.1944	27.3559
33.8853	34.0656	33.7170	35.4572		35.4632	35.4681	33.1927	33.1325	33.0963	33.0798	32.2490	32.5337	32.6417	32.8563	32.9559	33.6571	33.6226	33.4861	33.7527	33.8781	33.9871	33.5585	33.5363	33.5279	33.5621	33.5950	33.6169	33.1503	33.1029	33.0843	32.2671	32.4333
38.8772	39.0439	38.6753	40.4907		40.4919	40.4768	38.1173	38.0415	38.0225	38.0075	37.1787	37.4502	37.5487	37.7869	37.8915	38.5885	38.5384	38.4011	38.6400	38.7781	38.8978	38.4467	38.4275	38.4161	38.4171	38.4772	38.4923	38.0445	37.9915	37.9776	37.1954	37.3681
43.7595	43.9439	43.6041	45.3353		45.3441	45.3339	43.0916	43.0330	42.9975	42.9781	42.1555	42.4314	42.5356	42.7638	42.8681	43.5627	43.5307	43.3981	43.7199	43.7895	43.8817	43.4855	43.4587	43.4460	43.4651	43.5178	43.5341	43.0329	42.9757	42.9467	42.1837	42.3493
48.3378	48.5172	48.1873	49.8478		49.8560	49.8459	47.6452	47.5836	47.5540	47.5362	46.7430	47.0237	47.1259	47.3465	47.4529	48.1491	48.1116	47.9759	48.2783	48.3701	48.4657	48.0614	48.0342	48.0238	48.0399	48.0967	48.1131	47.6180	47.5702	47.5455	46.7695	46.9322
1.6788	1.5182	1.8670	-0.0296		-0.0279	-0.0572	2.4184	2.4821	2.5309	2.5328	3.3270	3.0516	2.9460	2.7145	2.6237	1.9345	1.9785	2.0879	1.8302	1.7130	1.6063	2.0449	2.0360	2.0515	1.9877	1.9955	1.9668	2.3811	2.4405	2.4450	3.3212	3.1456
0.9998	0.9994	0.9993	1.0032		1.0030	1.0038	0.9989	0.9990	0.9985	0.9989	0.9992	0.9992	0.9993	0.9994	0.9991	0.9989	0.9989	0.9994	0.9986	0.9991	0.9992	0.9987	0.9995	0.9993	1.0005	0.9990	0.9993	1.0009	1.0008	1.0012	0.9988	0.9991
0.0236	0.0267	0.0338	0.0420		0.0426	0.0403	0.0228	0.0351	0.0379	0.0341	0.0368	0.0484	0.0642	0.0371	0.0288	0.0437	0.0611	0.0413	0.0397	0.0451	0.0508	0.0506	0.0449	0.0432	0.0578	0.0457	0.0388	0.0447	0.0525	0.0500	0.0354	0.0353
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0.0575	0.0634	0.0609	0.0398		0.0410	0.0469	0.0760	0.0805	0.0785	0.0758	0.0515	0.0602	0.0657	0.0512	0.0491	0.0561	0.0627	0.0548	0.0351	0.0610	0.0671	0.0588	0.0541	0.0571	0.0662	0.0583	0.0600	0.0621	0.0682	0.0683	0.0498	0.0481
0.0483	0.0387	0.0159	0.0892		0.0847	0.0747	-0.0045	-0.0158	-0.0026	-0.0019	-0.0225	-0.0271	-0.0306	-0.0211	-0.0198	-0.0177	-0.0271	-0.0330	-0.0846	-0.0435	-0.0263	-0.0596	-0.0574	-0.0580	-0.0764	-0.0642	-0.0680	-0.0392	-0.0395	-0.0326	-0.0277	-0.0218
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0.0071	0.0063	0.0214	-0.0241		-0.0233	-0.0202	0.0133	0.0166	0.0149	0.0162	0.0345	0.0391	0.0401	0.0329	0.0327	0.0328	0.0352	0.0364	0.0401	0.0401	0.0344	0.0423	0.0441	0.0434	0.0510	0.0460	0.0460	0.0432	0.0464	0.0465	0.0350	0.0333

63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
20.0893	20.1496	20.0588	20.1019	20.1084	20.1273	20.1066	18.5586	18.0118	18.1226	20.1621	20.1333	20.2264	18.2434	17.7629	17.7248	20.1285	20.1391	20.2251	18.7231	18.9371	19.0251	19.5936	19.5616	19.5906	19.6867	19.7780	19.8314	19.9411	19.3569	19.2786	19.0988	19.1228	19.1414
22.3569	22.4159	22.3264	22.3702	22.3751	22.3956	22.3740	20.8260	20.2936	20.4069	22.4281	22.3994	22.4899	20.5083	20.0232	20.0116	22.4000	22.4061	22.4939	21.0547	21.2283	21.3238	21.9141	21.8538	21.8486	21.9529	22.0674	22.1157	22.2011	21.6173	21.5558	21.3809	21.3971	21.4115
25.4525	25.5159	25.4223	25.4705	25.4745	25.4927	25.4741	23.9631	23.4177	23.5419	25.5279	25.5002	25.5929	23.6439	23.1521	23.1286	25.4939	25.5079	25.5885	24.1893	24.3574	24.4509	25.0230	24.9704	24.9648	25.0604	25.1701	25.2177	25.2999	24.7248	24.6553	24.4889	24.4993	24.5206
30.3767	30.4408	30.3450	30.3977	30.3977	30.4176	30.3995	28.8819	28.3377	28.4549	30.4535	30.4238	30.5142	28.5611	28.0638	28.0473	30.4167	30.4331	30.5083	29.0232	29.2003	29.2977	29.9001	29.8585	29.8461	29.9606	30.0678	30.1131	30.2125	29.6215	29.5572	29.3849	29.3989	29.4231
35.4357	35.5080	35.4029	35.4643	35.4619	35.4771	35.4651	33.9856	33.4257	33.5427	35.5204	35.4903	35.5863	33.6643	33.1588	33.1289	35.4811	35.5016	35.5689	34.0335	34.2372	34.3427	34.9434	34.9269	34.9297	35.0617	35.1515	35.2034	35.3143	34.7252	34.6541	34.4813	34.5058	34.5297
40.4349	40.5134	40.4029	40.4713	40.4657	40.4666	40.4707	38.9917	38.4441	38.5601	40.5254	40.4961	40.5926	38.6771	38.0755	38.0606	40.4766	40.5082	40.5581	39.0666	39.2637	39.3687	39.9681	39.9515	39.9430	40.0729	40.1709	40.2116	40.3181	39.7317	39.6749	39.5029	39.5243	39.5448
45.3092	45.3901	45.2782	45.3519	45.3434	45.3372	45.3495	43.8960	43.3437	43.4627	45.3993	45.3747	45.4693	43.5799	43.0283	43.0040	45.3501	45.3873	45.4229	44.0307	44.2103	44.2986	44.8819	44.8462	44.8355	44.9615	45.0426	45.0865	45.1885	44.5909	44.5407	44.3690	44.3860	44.4105
49.8197	49.9043	49.7875	49.8678	49.8586	49.8434	49.8642	48.4794	47.9130	48.0403	49.9149	49.8897	49.9850	48.1572	47.6180	47.5946	49.8629	49.9035	49.9297	48.5614	48.7484	48.8527	49.4465	49.4159	49.4092	49.5448	49.6359	49.6728	49.7710	49.1952	49.1442	48.9742	48.9922	49.0218
-0.0230	-0.0632	0.0065	-0.0090	-0.0266	-0.0755	-0.0193	1.6259	2.1518	2.0433	-0.0776	-0.0457	-0.1346	1.9417	2.3688	2.3944	-0.0632	-0.0466	-0.1822	1.3480	1.1594	1.0717	0.4998	0.5606	0.5418	0.4697	0.3501	0.2908	0.2010	0.7830	0.8702	1.0477	1.0310	1.0196
1.0037	1.0028	1.0038	1.0025	1.0031	1.0043	1.0028	0.9981	0.9988	0.9985	1.0029	1.0028	1.0027	0.9982	1.0011	1.0010	1.0037	1.0025	1.0047	1.0024	1.0025	1.0022	1.0016	1.0009	1.0015	1.0002	1.0008	1.0012	1.0009	1.0010	1.0003	1.0001	1.0001	0.9998
0.0415	0.0437	0.0417	0.0433	0.0436	0.0374	0.0433	0.0492	0.0421	0.0389	0.0434	0.0442	0.0457	0.0516	0.0506	0.0365	0.0397	0.0437	0.0373	0.0170	0.0432	0.0381	0.0252	0.0392	0.0618	0.0594	0.0440	0.0461	0.0604	0.0600	0.0545	0.0492	0.0556	0.0566
-0.0823	-0.0835	-0.0821	-0.0827	-0.0828	-0.0846	-0.0830	-0.0877	-0.0788	-0.0802	-0.0839	-0.0834	-0.0848	-0.0877	-0.0867	-0.0745	-0.0805	-0.0835	-0.0832	-0.0457	-0.0599	-0.0583	-0.0506	-0.0666	-0.0769	-0.0740	-0.0647	-0.0669	-0.0776	-0.0773	-0.0677	-0.0683	-0.0698	-0.0738
0.0249	0.0252	0.0256	0.0255	0.0262	0.0256	0.0258	0.0434	0.0416	0.0501	0.0249	0.0262	0.0264	0.0421	0.0455	0.0456	0.0249	0.0262	0.0258	0.0966	0.0769	0.0756	0.0634	0.0527	0.0441	0.0340	0.0404	0.0388	0.0240	0.0334	0.0328	0.0401	0.0328	0.0346
-0.0325	-0.0358	-0.0330	-0.0350	-0.0356	-0.0285	-0.0351	-0.0471	-0.0442	-0.0442	-0.0351	-0.0364	-0.0391	-0.0497	-0.0375	-0.0309	-0.0342	-0.0362	-0.0315	-0.0577	-0.0683	-0.0670	-0.0516	-0.0549	-0.0673	-0.0651	-0.0579	-0.0599	-0.0589	-0.0649	-0.0639	-0.0631	-0.0672	-0.0641
0.0455	0.0458	0.0442	0.0443	0.0442	0.0525	0.0446	0.0469	0.0377	0.0361	0.0467	0.0444	0.0464	0.0442	0.0629	0.0556	0.0489	0.0453	0.0528	-0.0351	-0.0189	-0.0111	-0.0001	0.0178	0.0239	0.0368	0.0299	0.0365	0.0476	0.0441	0.0346	0.0340	0.0402	0.0414
0.0634	0.0654	0.0632	0.0639	0.0633	0.0632	0.0641	0.0435	0.0501	0.0459	0.0663	0.0642	0.0661	0.0477	-0.0152	-0.0079	0.0629	0.0646	0.0653	0.0103	0.0200	0.0258	0.0328	0.0467	0.0447	0.0487	0.0534	0.0507	0.0560	0.0558	0.0568	0.0562	0.0591	0.0553
-0.0440	-0.0439	-0.0430	-0.0433	-0.0440	-0.0455	-0.0435	-0.0615	-0.0562	-0.0587	-0.0455	-0.0435	-0.0442	-0.0585	-0.0571	-0.0597	-0.0456	-0.0439	-0.0471	-0.0135	-0.0212	-0.0336	-0.0455	-0.0543	-0.0555	-0.0619	-0.0711	-0.0685	-0.0692	-0.0800	-0.0760	-0.0769	-0.0787	-0.0801
-0.0166	-0.0170	-0.0165	-0.0161	-0.0149	-0.0201	-0.0162	0.0132	0.0077	0.0120	-0.0168	-0.0158	-0.0165	0.0104	0.0375	0.0354	-0.0162	-0.0162	-0.0194	0.0283	0.0281	0.0303	0.0265	0.0194	0.0251	0.0221	0.0259	0.0233	0.0176	0.0290	0.0289	0.0289	0.0280	0.0301

63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
20.0893	20.1496	20.0588	20.1019	20.1084	20.1273	20.1066	18.5586	18.0118	18.1226	20.1621	20.1333	20.2264	18.2434	17.7629	17.7248	20.1285	20.1391	20.2251	18.7231	18.9371	19.0251	19.5936	19.5616	19.5906	19.6867	19.7780	19.8314	19.9411	19.3569	19.2786	19.0988	19.1228	19.1414
22.3569	22.4159	22.3264	22.3702	22.3751	22.3956	22.3740	20.8260	20.2936	20.4069	22.4281	22.3994	22.4899	20.5083	20.0232	20.0116	22.4000	22.4061	22.4939	21.0547	21.2283	21.3238	21.9141	21.8538	21.8486	21.9529	22.0674	22.1157	22.2011	21.6173	21.5558	21.3809	21.3971	21.4115
25.4525	25.5159	25.4223	25.4705	25.4745	25.4927	25.4741	23.9631	23.4177	23.5419	25.5279	25.5002	25.5929	23.6439	23.1521	23.1286	25.4939	25.5079	25.5885	24.1893	24.3574	24.4509	25.0230	24.9704	24.9648	25.0604	25.1701	25.2177	25.2999	24.7248	24.6553	24.4889	24.4993	24.5206
30.3767	30.4408	30.3450	30.3977	30.3977	30.4176	30.3995	28.8819	28.3377	28.4549	30.4535	30.4238	30.5142	28.5611	28.0638	28.0473	30.4167	30.4331	30.5083	29.0232	29.2003	29.2977	29.9001	29.8585	29.8461	29.9606	30.0678	30.1131	30.2125	29.6215	29.5572	29.3849	29.3989	29.4231
35.4357	35.5080	35.4029	35.4643	35.4619	35.4771	35.4651	33.9856	33.4257	33.5427	35.5204	35.4903	35.5863	33.6643	33.1588	33.1289	35.4811	35.5016	35.5689	34.0335	34.2372	34.3427	34.9434	34.9269	34.9297	35.0617	35.1515	35.2034	35.3143	34.7252	34.6541	34.4813	34.5058	34.5297
40.4627	40.5403	40.4253	40.4991	40.4914	40.4515	40.4971	38.8968	38.3147	38.4271	40.5503	40.5227	40.6171	38.5325	38.0538	38.0321	40.4572	40.5367	40.4899	39.1200	39.3049	39.4077	40.0041	39.9579	39.9469	40.0776	40.1767	40.2269	40.3258	39.7099	39.6619	39.5049	39.5229	39.5273
45.3092	45.3901	45.2782	45.3519	45.3434	45.3372	45.3495	43.8960	43.3437	43.4627	45.3993	45.3747	45.4693	43.5799	43.0283	43.0040	45.3501	45.3873	45.4229	44.0307	44.2103	44.2986	44.8819	44.8462	44.8355	44.9615	45.0426	45.0865	45.1885	44.5909	44.5407	44.3690	44.3860	44.4105
49.8197	49.9043	49.7875	49.8678	49.8586	49.8434	49.8642	48.4794	47.9130	48.0403	49.9149	49.8897	49.9850	48.1572	47.6180	47.5946	49.8629	49.9035	49.9297	48.5614	48.7484	48.8527	49.4465	49.4159	49.4092	49.5448	49.6359	49.6728	49.7710	49.1952	49.1442	48.9742	48.9922	49.0218
-0.0188	-0.0591	0.0099	-0.0048	-0.0227	-0.0778	-0.0153	1.6133	2.1353	2.0263	-0.0738	-0.0416	-0.1308	1.9231	2.3661	2.3909	-0.0661	-0.0423	-0.1925	1.3553	1.1651	1.0772	0.5050	0.5616	0.5424	0.4704	0.3510	0.2930	0.2021	0.7799	0.8684	1.0480	1.0308	1.0172
1.0035	1.0026	1.0036	1.0023	1.0029	1.0044	1.0026	0.9989	0.9998	0.9996	1.0027	1.0026	1.0025	0.9993	1.0012	1.0012	1.0039	1.0023	1.0052	1.0020	1.0021	1.0019	1.0013	1.0008	1.0015	1.0001	1.0008	1.0011	1.0009	1.0012	1.0004	1.0001	1.0001	0.9999
0.0412	0.0434	0.0414	0.0430	0.0432	0.0376	0.0429	0.0507	0.0442	0.0411	0.0431	0.0438	0.0454	0.0540	0.0509	0.0370	0.0399	0.0433	0.0383	0.0162	0.0426	0.0376	0.0247	0.0391	0.0617	0.0594	0.0440	0.0458	0.0603	0.0603	0.0547	0.0492	0.0557	0.0569
-0.0832	-0.0844	-0.0829	-0.0836	-0.0836	-0.0841	-0.0838	-0.0845	-0.0744	-0.0756	-0.0847	-0.0842	-0.0856	-0.0827	-0.0859	-0.0735	-0.0798	-0.0844	-0.0809	-0.0475	-0.0613	-0.0596	-0.0518	-0.0668	-0.0770	-0.0741	-0.0649	-0.0674	-0.0778	-0.0766	-0.0672	-0.0684	-0.0698	-0.0732
0.0233	0.0237	0.0243	0.0239	0.0247	0.0265	0.0243	0.0490	0.0493	0.0580	0.0235	0.0246	0.0250	0.0507	0.0468	0.0473	0.0260	0.0245	0.0298	0.0934	0.0745	0.0733	0.0613	0.0523	0.0438	0.0337	0.0401	0.0379	0.0236	0.0346	0.0335	0.0400	0.0328	0.0356
-0.0352	-0.0385	-0.0352	-0.0377	-0.0381	-0.0270	-0.0377	-0.0377	-0.0315	-0.0311	-0.0375	-0.0390	-0.0415	-0.0355	-0.0354	-0.0281	-0.0323	-0.0390	-0.0247	-0.0630	-0.0723	-0.0708	-0.0551	-0.0556	-0.0677	-0.0656	-0.0585	-0.0614	-0.0596	-0.0628	-0.0626	-0.0633	-0.0671	-0.0624
0.0416	0.0420	0.0410	0.0404	0.0406	0.0546	0.0409	0.0601	0.0557	0.0546	0.0432	0.0407	0.0430	0.0643	0.0659	0.0596	0.0516	0.0413	0.0623	-0.0426	-0.0246	-0.0165	-0.0051	0.0169	0.0233	0.0361	0.0291	0.0344	0.0465	0.0471	0.0364	0.0337	0.0404	0.0438
0.0863	0.0875	0.0816	0.0867	0.0845	0.0508	0.0858	-0.0343	-0.0561	-0.0632	0.0867	0.0860	0.0862	-0.0709	-0.0330	-0.0313	0.0469	0.0880	0.0091	0.0542	0.0539	0.0578	0.0623	0.0520	0.0479	0.0526	0.0581	0.0633	0.0623	0.0379	0.0461	0.0579	0.0580	0.0410
-0.0501	-0.0499	-0.0479	-0.0494	-0.0497	-0.0421	-0.0493	-0.0408	-0.0279	-0.0297	-0.0510	-0.0493	-0.0496	-0.0270	-0.0523	-0.0535	-0.0413	-0.0502	-0.0321	-0.0253	-0.0303	-0.0422	-0.0534	-0.0557	-0.0563	-0.0629	-0.0723	-0.0719	-0.0709	-0.0752	-0.0731	-0.0774	-0.0783	-0.0763
-0.0237	-0.0239	-0.0223	-0.0232	-0.0216	-0.0162	-0.0230	0.0374	0.0407	0.0459	-0.0232	-0.0226	-0.0228	0.0472	0.0430	0.0426	-0.0112	-0.0235	-0.0018	0.0146	0.0175	0.0203	0.0172	0.0178	0.0241	0.0209	0.0244	0.0194	0.0156	0.0346	0.0323	0.0284	0.0284	0.0346

97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119
19.0138	18.8927	18.9155	18.6069	18.7679	18.8894	18.9478	19.3143	20.1301	20.1849	20.0909	19.7710	19.8034	19.8721	19.9036	19.3096	19.1919	19.1428	19.1153	19.1355	18.9219	18.9093	18.9049
21.2844	21.1687	21.1772	20.9002	21.0796	21.2055	21.2593	21.5958	22.3939	22.4506	22.3586	22.0503	22.0844	22.1429	22.1637	21.5713	21.4806	21.4259	21.3847	21.4101	21.2002	21.1718	21.1706
24.3861	24.2837	24.2959	24.0466	24.2116	24.3437	24.3993	24.7182	25.4910	25.5541	25.4583	25.1534	25.1938	25.2501	25.2664	24.6788	24.5817	24.5416	24.4981	24.5175	24.3057	24.2986	24.2815
29.2764	29.1668	29.1786	28.8789	29.0465	29.1881	29.2399	29.5709	30.4085	30.4791	30.3825	30.0583	30.0967	30.1541	30.1801	29.5789	29.4839	29.4377	29.3923	29.4183	29.1956	29.1859	29.1687
34.3179	34.2015	34.2301	33.9145	34.0670	34.2063	34.2731	34.6322	35.4689	35.5511	35.4471	35.1505	35.1893	35.2531	35.2921	34.6767	34.5667	34.5393	34.5024	34.5243	34.2358	34.2332	34.2176
39.3227	39.2091	39.2360	38.9421	39.1047	39.2322	39.3084	39.6512	40.4665	40.5559	40.4499	40.1680	40.1953	40.2631	40.2914	39.6922	39.5851	39.5633	39.5192	39.5375	39.2348	39.2405	39.2199
44.1857	44.0732	44.1146	43.9137	44.0621	44.1869	44.2469	44.5792	45.3383	45.4332	45.3275	45.0597	45.0721	45.1358	45.1681	44.5519	44.4497	44.4343	44.3811	44.3973	44.0991	44.1181	44.0911
48.8134	48.6914	48.7311	48.4292	48.5995	48.7263	48.7974	49.1342	49.8461	49.9493	49.8405	49.6421	49.6607	49.7172	49.7438	49.1530	49.0532	49.0453	48.9975	49.0134	48.7295	48.7341	48.7056
1.0737	1.1841	1.1917	1.4956	1.3218	1.1912	1.1470	0.7979	-0.0710	-0.0919	-0.0104	0.3833	0.3297	0.2675	0.2473	0.8344	0.9370	1.0193	1.0457	1.0176	1.1594	1.1988	1.1891
1.0035	1.0036	1.0026	1.0020	1.0023	1.0023	1.0017	1.0020	1.0042	1.0025	1.0031	0.9999	1.0006	1.0006	1.0004	1.0008	1.0008	0.9993	0.9998	1.0000	1.0035	1.0024	1.0032
0.0539	0.0452	0.0572	0.0389	0.0322	0.0236	0.0277	0.0503	0.0431	0.0436	0.0423	0.0528	0.0455	0.0523	0.0593	0.0596	0.0444	0.0486	0.0569	0.0535	0.0470	0.0531	0.0542
-0.0676	-0.0706	-0.0751	-0.0634	-0.0509	-0.0550	-0.0568	-0.0636	-0.0837	-0.0850	-0.0831	-0.0680	-0.0722	-0.0754	-0.0797	-0.0769	-0.0651	-0.0699	-0.0742	-0.0719	-0.0668	-0.0790	-0.0728
0.0449	0.0557	0.0519	0.0891	0.0883	0.0903	0.0887	0.0650	0.0264	0.0262	0.0262	0.0348	0.0392	0.0338	0.0243	0.0331	0.0385	0.0436	0.0386	0.0356	0.0495	0.0552	0.0480
-0.0477	-0.0435	-0.0525	-0.0692	-0.0659	-0.0543	-0.0623	-0.0727	-0.0356	-0.0364	-0.0348	-0.0606	-0.0548	-0.0590	-0.0599	-0.0629	-0.0554	-0.0638	-0.0683	-0.0635	-0.0437	-0.0459	-0.0493
0.0115	0.0094	0.0123	-0.0237	-0.0340	-0.0246	-0.0205	-0.0014	0.0459	0.0483	0.0458	0.0312	0.0410	0.0432	0.0542	0.0391	0.0316	0.0343	0.0407	0.0426	0.0140	0.0134	0.0157
0.0337	0.0351	0.0315	0.0138	0.0151	0.0127	0.0236	0.0276	0.0644	0.0657	0.0638	0.0483	0.0500	0.0564	0.0556	0.0586	0.0539	0.0547	0.0564	0.0559	0.0304	0.0326	0.0339
-0.0863	-0.0831	-0.0770	-0.0049	-0.0163	-0.0213	-0.0294	-0.0347	-0.0435	-0.0449	-0.0436	-0.0603	-0.0701	-0.0678	-0.0656	-0.0778	-0.0776	-0.0777	-0.0827	-0.0842	-0.0884	-0.0782	-0.0794
0.0575	0.0518	0.0517	0.0194	0.0315	0.0285	0.0290	0.0293	-0.0169	-0.0175	-0.0167	0.0218	0.0214	0.0166	0.0120	0.0271	0.0297	0.0301	0.0327	0.0320	0.0580	0.0488	0.0498

Std deviation for row
0.012
0.018 looks high
0.016
0.017
0.021
0.032
0.016
0.022

0.2361 Max Diff
0.0545 std dev all data

97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119
19.0138	18.8927	18.9155	18.6069	18.7679	18.8894	18.9478	19.3143	20.1301	20.1849	20.0909	19.7710	19.8034	19.8721	19.9036	19.3096	19.1919	19.1428	19.1153	19.1355	18.9219	18.9093	18.9049
21.2844	21.1687	21.1772	20.9002	21.0796	21.2055	21.2593	21.5958	22.3939	22.4506	22.3586	22.0503	22.0844	22.1429	22.1637	21.5713	21.4806	21.4259	21.3847	21.4101	21.2002	21.1718	21.1706
24.3861	24.2837	24.2959	24.0466	24.2116	24.3437	24.3993	24.7182	25.4910	25.5541	25.4583	25.1534	25.1938	25.2501	25.2664	24.6788	24.5817	24.5416	24.4981	24.5175	24.3057	24.2986	24.2815
29.2764	29.1668	29.1786	28.8789	29.0465	29.1881	29.2399	29.5709	30.4085	30.4791	30.3825	30.0583	30.0967	30.1541	30.1801	29.5789	29.4839	29.4377	29.3923	29.4183	29.1956	29.1859	29.1687
34.3179	34.2015	34.2301	33.9145	34.0670	34.2063	34.2731	34.6322	35.4689	35.5511	35.4471	35.1505	35.1893	35.2531	35.2921	34.6767	34.5667	34.5393	34.5024	34.5243	34.2358	34.2332	34.2176
39.3876	39.2685	39.2922	38.9974	39.1624	39.2913	39.3453	39.6843	40.4917	40.5753	40.4757	40.1741	40.2029	40.2754	40.2927	39.6745	39.5740	39.5493	39.5071	39.5112	39.3081	39.2817	39.2623
44.1857	44.0732	44.1146	43.9137	44.0621	44.1869	44.2469	44.5792	45.3383	45.4332	45.3275	45.0597	45.0721	45.1358	45.1681	44.5519	44.4497	44.4343	44.3811	44.3973	44.0991	44.1181	44.0911
48.8134	48.6914	48.7311	48.4292	48.5995	48.7263	48.7974	49.1342	49.8461	49.9493	49.8405	49.6421	49.6607	49.7172	49.7438	49.1530	49.0532	49.0453	48.9975	49.0134	48.7295	48.7341	48.7056
1.0829	1.1924	1.1996	1.5031	1.3297	1.1994	1.1522	0.8026	-0.0672	-0.0889	-0.0065	0.3841	0.3308	0.2693	0.2475	0.8319	0.9355	1.0173	1.0440	1.0139	1.1697	1.2046	1.1951
1.0030	1.0031	1.0022	1.0015	1.0018	1.0018	1.0014	1.0017	1.0040	1.0023	1.0029	0.9999	1.0006	1.0005	1.0004	1.0010	1.0009	0.9994	0.9999	1.0002	1.0029	1.0020	1.0028
0.0530	0.0443	0.0564	0.0380	0.0313	0.0228	0.0272	0.0499	0.0428	0.0434	0.0419	0.0527	0.0454	0.0521	0.0592	0.0599	0.0446	0.0488	0.0571	0.0539	0.0460	0.0525	0.0536
-0.0697	-0.0725	-0.0769	-0.0653	-0.0528	-0.0570	-0.0580	-0.0647	-0.0845	-0.0856	-0.0839	-0.0682	-0.0724	-0.0758	-0.0798	-0.0764	-0.0647	-0.0694	-0.0738	-0.0710	-0.0692	-0.0804	-0.0742
0.0412	0.0523	0.0486	0.0859	0.0849	0.0869	0.0865	0.0631	0.0249	0.0251	0.0247	0.0345	0.0388	0.0331	0.0242	0.0341	0.0391	0.0444	0.0393	0.0371	0.0452	0.0528	0.0455
-0.0540	-0.0494	-0.0580	-0.0746	-0.0715	-0.0601	-0.0660	-0.0759	-0.0381	-0.0383	-0.0371	-0.0612	-0.0556	-0.0602	-0.0600	-0.0611	-0.0543	-0.0624	-0.0671	-0.0609	-0.0509	-0.0500	-0.0534
0.0024	0.0011	0.0045	-0.0313	-0.0420	-0.0328	-0.0256	-0.0060	0.0423	0.0455	0.0420	0.0303	0.0399	0.0414	0.0540	0.0416	0.0331	0.0362	0.0424	0.0483	0.0038	0.0077	0.0097
0.0871	0.0840	0.0777	0.0592	0.0625	0.0613	0.0539	0.0548	0.0851	0.0816	0.0850	0.0533	0.0562	0.0665	0.0566	0.0441	0.0448	0.0433	0.0465	0.0343	0.0907	0.0665	0.0687
-0.1007	-0.0962	-0.0894	-0.0171	-0.0290	-0.0343	-0.0375	-0.0420	-0.0491	-0.0491	-0.0493	-0.0616	-0.0718	-0.0705	-0.0659	-0.0739	-0.0751	-0.0746	-0.0801	-0.0785	-0.1046	-0.0873	-0.0887
0.0408	0.0364	0.0372	0.0052	0.0166	0.0133	0.0195	0.0208	-0.0234	-0.0225	-0.0234	0.0202	0.0194	0.0134	0.0116	0.0316	0.0325	0.0337	0.0358	0.0388	0.0390	0.0382	0.0389

0.101 0.105

Std deviation for row
0.010
0.011 looks high
0.015
0.016
0.027
0.047
0.018
0.021

0.1046 Max Diff
0.0514 std dev all data

Calculation of regression values used to correct thermocouple readings for coldtrap experiment.

Conducted on April 25, 2006

Thermocouple check

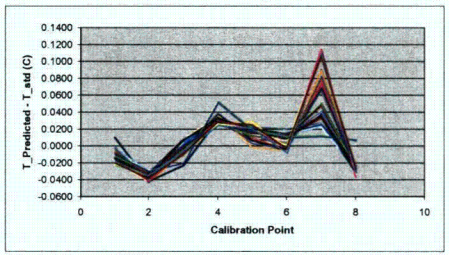
Thermometer reading oC	Thermocouple no. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
* 20.50	16.7709	17.2869	17.1284	17.6522	17.7509	18.4992	19.1915	18.3697	18.5575	18.7119	18.8122	19.0587	19.0672	18.3801	18.4424	18.4780	18.5100	18.5152	17.8998	17.8915	16.9473	17.1418	17.3322	17.6239	17.3036	18.0591	19.1278	18.4450	18.6618	18.7725	18.9221
* 23.20	19.4289	19.9695	19.8224	20.3191	20.4222	21.1814	21.8651	21.0356	21.2489	21.3828	21.4895	21.7350	21.7386	21.0568	21.1317	21.1576	21.1881	21.1942	20.5949	20.5721	19.6298	19.8316	20.0005	20.2949	19.9839	20.7279	21.8069	21.1310	21.3351	21.4465	21.6032
* 26.00	22.2585	22.8064	22.6541	23.1587	23.2613	24.0183	24.6831	23.8829	24.0874	24.2165	24.3264	24.5575	24.5569	23.9028	23.9760	24.0048	24.0291	24.0421	23.4227	23.4099	22.4631	22.6618	22.8396	23.1304	22.8218	23.5650	24.6356	23.9728	24.1716	24.2773	24.4340
* 30.00	26.3282	26.8564	26.7073	27.2076	27.3029	28.0475	28.7151	27.9142	28.1149	28.2415	28.3465	28.5892	28.5914	27.9334	27.9989	28.0328	28.0605	28.0685	27.4677	27.4529	26.5268	26.7166	26.8918	27.1841	26.8748	27.6030	28.6690	27.9955	28.1992	28.3062	28.4571
* 33.00	29.3143	29.8386	29.6909	30.1946	30.2856	31.0386	31.7084	30.9064	31.1076	31.2274	31.3431	31.5796	31.5850	30.9118	30.9902	31.0126	31.0514	31.0535	30.4706	30.4602	29.4995	29.7026	29.8676	30.1699	29.8508	30.5886	31.6553	30.9853	31.1939	31.2910	31.4492
* 36.00	32.3137	32.8401	32.6927	33.1874	33.2940	34.0379	34.7036	33.9020	34.1034	34.2244	34.3361	34.5752	34.5770	33.9124	33.9762	34.0056	34.0427	34.0504	33.4479	33.4336	32.5065	32.6986	32.8689	33.1668	32.8475	33.5932	34.6482	33.9825	34.1862	34.2862	34.4473
* 40.20	36.6257	37.1286	36.9898	37.4655	37.5602	38.2797	38.9068	38.1324	38.3370	38.4403	38.5503	38.7801	38.7849	38.1473	38.2148	38.2413	38.2730	38.2814	37.7684	37.7569	36.8182	36.9955	37.1659	37.4377	37.1312	37.8362	38.8649	38.2100	38.4110	38.5076	38.6568
* 45.00	41.3255	41.8396	41.6939	42.1784	42.2711	43.0071	43.6421	42.8726	43.0724	43.1766	43.2963	43.5295	43.5332	42.8820	42.9499	42.9734	43.0115	43.0131	42.4378	42.4193	41.5212	41.7066	41.8664	42.1578	41.8459	42.5658	43.5976	42.9540	43.1505	43.2401	43.4077
50.00	46.3324	46.8501	46.6939	47.1861	47.2783	48.0175	48.6553	47.8773	48.0800	48.1784	48.3066	48.5389	48.5456	47.8866	47.9547	47.9811	48.0178	48.0169	47.4170	47.3984	46.5218	46.7053	46.8686	47.1621	46.8533	47.5683	48.6066	47.9570	48.1651	48.2448	48.4118
Intercept	3.8019	3.2561	3.4096	2.8832	2.7767	2.0075	1.2830	2.1396	1.9402	1.7658	1.6774	1.4258	1.4228	2.1177	2.0467	2.0113	1.9878	1.9746	2.6104	2.6211	3.6097	3.3998	3.2079	2.9122	3.2295	2.4567	1.3488	2.0501	1.8387	1.7069	1.5642
Slope	0.9963	0.9970	0.9969	0.9979	0.9982	0.9990	1.0010	0.9991	0.9991	1.0007	1.0000	1.0004	1.0004	0.9994	0.9995	0.9997	0.9994	0.9996	0.9981	0.9983	0.9963	0.9969	0.9976	0.9977	0.9975	0.9989	1.0005	0.9994	0.9996	1.0006	1.0001

Difference between the corrected temperature reading and the standard thermometer reading. Corrected Temperature Reading (applied Slope and Offset to the above reading).

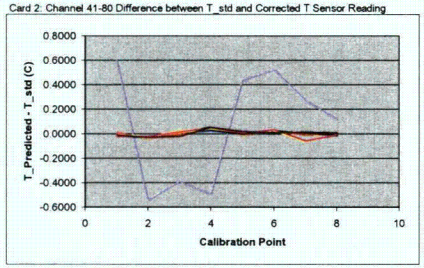
0.0099	-0.0085	-0.0158	-0.0025	-0.0052	-0.0123	-0.0070	-0.0068	-0.0199	-0.0087	-0.0106	-0.0074	-0.0025	-0.0134	-0.0210	-0.0164	-0.0135	-0.0171	-0.0230	-0.0183	-0.0066	-0.0121	-0.0021	-0.0043	-0.0095	-0.0046	-0.0137	-0.0168	-0.0074	-0.0098	-0.0115
-0.0420	-0.0340	-0.0302	-0.0413	-0.0389	-0.0329	-0.0308	-0.0432	-0.0309	-0.0359	-0.0334	-0.0299	-0.0300	-0.0382	-0.0331	-0.0376	-0.0370	-0.0391	-0.0329	-0.0423	-0.0341	-0.0307	-0.0404	-0.0394	-0.0357	-0.0387	-0.0331	-0.0325	-0.0353	-0.0342	-0.0302
-0.0231	-0.0055	-0.0074	-0.0079	-0.0051	0.0011	-0.0100	0.0015	0.0048	-0.0002	0.0035	-0.0062	-0.0106	0.0060	0.0097	0.0086	0.0023	0.0078	-0.0103	-0.0094	-0.0114	-0.0094	-0.0083	-0.0104	-0.0049	-0.0048	-0.0031	0.0074	0.0000	-0.0018	0.0010
0.0314	0.0324	0.0331	0.0323	0.0292	0.0261	0.0259	0.0294	0.0286	0.0277	0.0235	0.0272	0.0255	0.0342	0.0304	0.0354	0.0312	0.0327	0.0272	0.0267	0.0371	0.0328	0.0341	0.0340	0.0382	0.0287	0.0324	0.0276	0.0259	0.0294	0.0245
0.0063	0.0058	0.0074	0.0129	0.0063	0.0141	0.0221	0.0189	0.0184	0.0158	0.0201	0.0189	0.0203	0.0107	0.0201	0.0142	0.0203	0.0165	0.0245	0.0287	-0.0014	0.0093	0.0027	0.0130	0.0068	0.0109	0.0203	0.0154	0.0193	0.0159	0.0170
-0.0056	-0.0017	-0.0003	-0.0007	0.0091	0.0103	0.0201	0.0119	0.0113	0.0149	0.0130	0.0157	0.0135	0.0096	0.0044	0.0063	0.0098	0.0123	-0.0036	-0.0030	-0.0057	-0.0040	-0.0034	0.0031	-0.0039	0.0121	0.0147	0.0107	0.0103	0.0128	0.0154
0.0902	0.0740	0.0834	0.0682	0.0674	0.0478	0.0273	0.0386	0.0410	0.0338	0.0272	0.0225	0.0231	0.0419	0.0408	0.0407	0.0375	0.0417	0.1089	0.1129	0.0898	0.0794	0.0832	0.0642	0.0693	0.0503	0.0336	0.0355	0.0333	0.0366	0.0254
-0.0276	-0.0290	-0.0273	-0.0290	-0.0303	-0.0297	-0.0328	-0.0253	-0.0281	-0.0264	-0.0268	-0.0261	-0.0268	-0.0262	-0.0267	-0.0287	-0.0269	-0.0283	-0.0304	-0.0328	-0.0247	-0.0242	-0.0279	-0.0266	-0.0277	-0.0254	-0.0313	-0.0235	-0.0293	-0.0282	-0.0231

List Maximum Diff (T_sensor- T_std) (only list if >0.1 C) 0.109 0.113

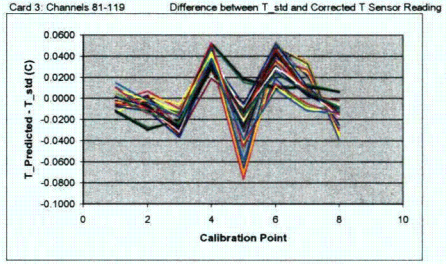
Card 1: Channel 1-40 Difference between T_std and Corrected T Sensor Reading



Card 2: Channel 41-80 Difference between T_std and Corrected T Sensor Reading



Card 3: Channels 81-119 Difference between T_std and Corrected T Sensor Reading



Removed Tc 215 readings as it was not inside water bath completely
Removed Calibration Point at 45.00 C, it looked bad(only point showing > 0.100 max. difference)

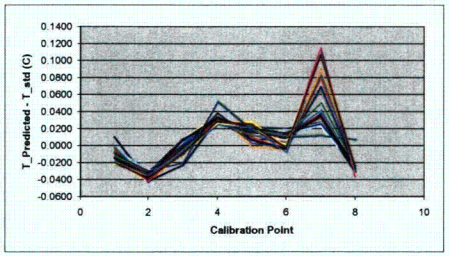
Thermometer reading oC	Thermocouple no. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
* 20.50	16.7709	17.2869	17.1284	17.6522	17.7509	18.4992	19.1915	18.3697	18.5575	18.7119	18.8122	19.0587	19.0672	18.3801	18.4424	18.4780	18.5100	18.5152	17.8998	17.8915	16.9473	17.1418	17.3322	17.6239	17.3036	18.0591	19.1278	18.4450	18.6618	18.7725	18.9221
* 23.20	19.4289	19.9695	19.8224	20.3191	20.4222	21.1814	21.8651	21.0356	21.2489	21.3828	21.4895	21.7350	21.7386	21.0568	21.1317	21.1576	21.1881	21.1942	20.5949	20.5721	19.6298	19.8316	20.0005	20.2949	19.9839	20.7279	21.8069	21.1310	21.3351	21.4465	21.6032
* 26.00	22.2585	22.8064	22.6541	23.1587	23.2613	24.0183	24.6831	23.8829	24.0874	24.2165	24.3264	24.5575	24.5569	23.9028	23.9760	24.0048	24.0291	24.0421	23.4227	23.4099	22.4631	22.6618	22.8396	23.1304	22.8218	23.5650	24.6356	23.9728	24.1716	24.2773	24.4340
* 30.00	26.3282	26.8564	26.7073	27.2076	27.3029	28.0475	28.7151	27.9142	28.1149	28.2415	28.3465	28.5892	28.5914	27.9334	27.9989	28.0328	28.0605	28.0685	27.4677	27.4529	26.5268	26.7166	26.8918	27.1841	26.8748	27.6030	28.6690	27.9955	28.1992	28.3062	28.4571
* 33.00	29.3143	29.8386	29.6909	30.1946	30.2856	31.0386	31.7084	30.9064	31.1076	31.2274	31.3431	31.5796	31.5850	30.9118	30.9902	31.0126	31.0514	31.0535	30.4706	30.4602	29.4995	29.7026	29.8676	30.1699	29.8508	30.5886	31.6553	30.9853	31.1939	31.2910	31.4492
* 36.00	32.3137	32.8401	32.6927	33.1874	33.2940	34.0379	34.7036	33.9020	34.1034	34.2244	34.3361	34.5752	34.5770	33.9124	33.9762	34.0056	34.0427	34.0504	33.4479	33.4336	32.5065	32.6986	32.8689	33.1668	32.8475	33.5932	34.6482	33.9825	34.1862	34.2862	34.4473
* 40.20	36.6257	37.1286	36.9898	37.4655	37.5602	38.2797	38.9068	38.1324	38.3370	38.4403	38.5503	38.7801	38.7849	38.1473	38.2148	38.2413	38.2730	38.2814	37.7684	37.7569	36.8182	36.9955	37.1659	37.4377	37.1312	37.8362	38.8649	38.2100	38.4110	38.5076	38.6568
* 45.00	41.3255	41.8396	41.6939	42.1784	42.2711	43.0071	43.6421	42.8726	43.0724	43.1766	43.2963	43.5295	43.5332	42.8820	42.9499	42.9734	43.0115	43.0131	42.4378	42.4193	41.5212	41.7066	41.8664	42.1578	41.8459	42.5658	43.5976	42.9540	43.1505	43.2401	43.4077
50.00	46.3324	46.8501	46.6939	47.1861	47.2783	48.0175	48.6553	47.8773	48.0800	48.1784	48.3066	48.5389	48.5456	47.8866	47.9547	47.9811	48.0178	48.0169	47.4170	47.3984	46.5218	46.7053	46.8686	47.1621	46.8533	47.5683	48.6066	47.9570	48.1651	48.2448	48.4118
Intercept	3.8019	3.2561	3.4096	2.8832	2.7767	2.0075	1.2830	2.1396	1.9402	1.7658	1.6774	1.4258	1.4228	2.1177	2.0467	2.0113	1.9878	1.9746	2.6104	2.6211	3.6097	3.3998	3.2079	2.9122	3.2295	2.4567	1.3488	2.0501	1.8387	1.7069	1.5642
Slope	0.9963	0.9970	0.9969	0.9979	0.9982	0.9990	1.0010	0.9991	0.9991	1.0007	1.0000	1.0004	1.0004	0.9994	0.9995	0.9997	0.9994	0.9996	0.9981	0.9983	0.9963	0.9969	0.9976	0.9977	0.9975	0.9989	1.0005	0.9994	0.9996	1.0006	1.0001

Difference between the corrected temperature reading and the standard thermometer reading. Corrected Temperature Reading (applied Slope and Offset to the above reading).

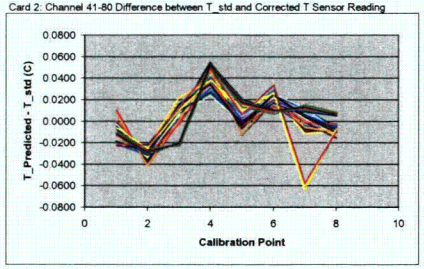
0.0099	-0.0085	-0.0158	-0.0025	-0.0052	-0.0123	-0.0070	-0.0068	-0.0199	-0.0087	-0.0106	-0.0074	-0.0025	-0.0134	-0.0210	-0.0164	-0.0135	-0.0171	-0.0230	-0.0183	-0.0066	-0.0121	-0.0021	-0.0043	-0.0095	-0.0046	-0.0137	-0.0168	-0.0074	-0.0098	-0.0115
-0.0420	-0.0340	-0.0302	-0.0413	-0.0389	-0.0329	-0.0308	-0.0432	-0.0309	-0.0359	-0.0334	-0.0299	-0.0300	-0.0382	-0.0331	-0.0376	-0.0370	-0.0391	-0.0329	-0.0423	-0.0341	-0.0307	-0.0404	-0.0394	-0.0357	-0.0387	-0.0331	-0.0325	-0.0353	-0.0342	-0.0302
-0.0231	-0.0055	-0.0074	-0.0079	-0.0051	0.0011	-0.0100	0.0015	0.0048	-0.0002	0.0035	-0.0062	-0.0106	0.0060	0.0097	0.0086	0.0023	0.0078	-0.0103	-0.0094	-0.0114	-0.0094	-0.0083	-0.0104	-0.0049	-0.0048	-0.0031	0.0074	0.0000	-0.0018	0.0010
0.0314	0.0324	0.0331	0.0323	0.0292	0.0261	0.0259	0.0294	0.0286	0.0277	0.0235	0.0272	0.0255	0.0342	0.0304	0.0354	0.0312	0.0327	0.0272	0.0267	0.0371	0.0328	0.0341	0.0340	0.0382	0.0287	0.0324	0.0276	0.0259	0.0294	0.0245
0.0063	0.0058	0.0074	0.0129	0.0063	0.0141	0.0221	0.0189	0.0184	0.0158	0.0201	0.0189	0.0203	0.0107	0.0201	0.0142	0.0203	0.0165	0.0245	0.0287	-0.0014	0.0093	0.0027	0.0130	0.0068	0.0109	0.0203	0.0154	0.0193	0.0159	0.0170
-0.0056	-0.0017	-0.0003	-0.0007	0.0091	0.0103	0.0201	0.0119	0.0113	0.0149	0.0130	0.0157	0.0135	0.0096	0.0044	0.0063	0.0098	0.0123	-0.0036	-0.0030	-0.0057	-0.0040	-0.0034	0.0031	-0.0039	0.0121	0.0147	0.0107	0.0103	0.0128	0.0154
-0.0276	-0.0290	-0.0273	-0.0290	-0.0303	-0.0297	-0.0328	-0.0253	-0.0281	-0.0264	-0.0268	-0.0261	-0.0268	-0.0262	-0.0267	-0.0287	-0.0269	-0.0283	-0.0304	-0.0328	-0.0247	-0.0242	-0.0279	-0.0266	-0.0277	-0.0254	-0.0313	-0.0235	-0.0293	-0.0282	-0.0231

List Maximum Diff (T_sensor- T_std) (only list if >0.1 C)

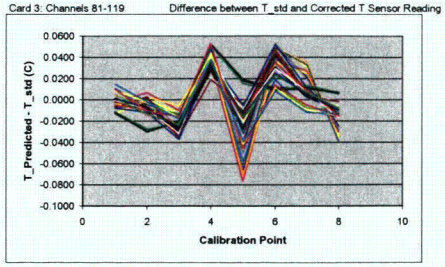
Card 1: Channel 1-40 Difference between T_std and Corrected T Sensor Reading

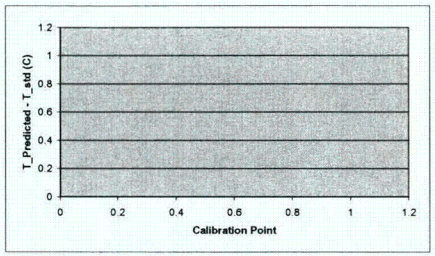


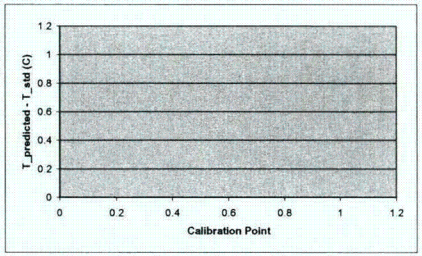
Card 2: Channel 41-80 Difference between T_std and Corrected T Sensor Reading

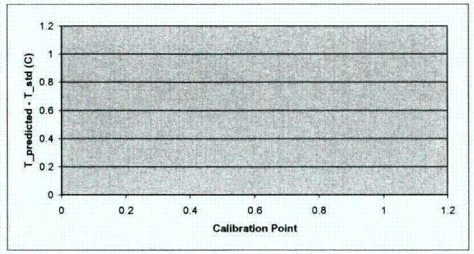


Card 3: Channels 81-119 Difference between T_std and Corrected T Sensor Reading




T_Predicted - T_std (C)
1.2
1
0.8
0.6
0.4
0.2
0
0
0.2
0.4
0.6
0.8
1
1.2
Calibration Point


T_predicted - T_std (C)
1.2
1
0.8
0.6
0.4
0.2
0
0
0.2
0.4
0.6
0.8
1
1.2
Calibration Point


T_predicted - T_std (C)
1.2
1
0.8
0.6
0.4
0.2
0
0
0.2
0.4
0.6
0.8
1
1.2
Calibration Point

Tc 215 was not completely inside water bath

32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66
18.5659	20.4805		20.4831	20.4672	18.0074	17.9493	17.9093	17.8896	17.0056	17.3079	17.4005	17.6436	17.7404	18.4682	18.4069	18.2922	18.5560	18.6761	18.8052	18.3146	18.3103	18.3211	19.7929	18.3577	18.3724	17.9378	17.8677	17.8519	17.0368	17.2112	20.4594	20.5214	20.4275	20.4745
21.2425	23.1501		23.1519	23.1351	20.6973	20.6281	20.5963	20.5765	19.6762	19.9602	20.0759	20.3265	20.4063	21.1529	21.1099	20.9677	21.2361	21.3765	21.4784	20.9975	21.0035	21.0066	20.9288	21.0520	21.0642	20.6129	20.5597	20.5433	19.6926	19.8836	23.1274	23.1928	23.0941	23.1455
24.0848	25.9463		25.9479	25.9315	23.5291	23.4661	23.4313	23.4103	22.5236	22.8043	22.9181	23.1666	23.2519	23.9936	23.9478	23.8139	24.0644	24.2116	24.3169	23.8417	23.8437	23.8521	23.0776	23.9006	23.9136	23.4559	23.3916	23.3873	22.5394	22.7148	25.9238	25.9874	25.8911	25.9431
28.1104	29.9994		30.0005	29.9841	27.5701	27.5092	27.4695	27.4564	26.5764	26.8485	26.9651	27.1967	27.2894	28.0222	27.9655	27.8384	28.0915	28.2386	28.3366	27.8806	27.8685	27.8742	25.9139	27.9247	27.9376	27.4782	27.4211	27.3987	26.5900	26.7612	29.9752	30.0422	29.9418	29.9981
31.0945	32.9519		32.9526	32.9370	30.5686	30.5035	30.4714	30.4579	29.5124	29.8081	29.9105	30.1591	30.2446	30.9909	30.9419	30.8039	31.0561	31.2066	31.3142	30.8411	30.8413	30.8459	28.7748	30.8899	30.9025	30.4401	30.3765	30.3708	29.5355	29.7209	32.9271	32.9938	32.8931	32.9514
34.0836	35.9301		35.9306	35.9151	33.5537	33.4851	33.4479	33.4361	32.5469	32.8389	32.9433	33.1811	33.2790	34.0099	33.9682	33.8321	34.0805	34.2348	34.3368	33.8684	33.8588	33.8668	31.0232	33.9199	33.9237	33.4604	33.4006	33.3805	32.5716	32.7426	35.9032	35.9735	35.8672	35.9302
38.3084	40.1127		40.1111	40.0971	37.8724	37.8088	37.7743	37.7533	36.7265	37.0126	37.1120	37.3669	37.4480	38.1898	38.1463	38.0191	38.2569	38.4245	38.5258	38.0543	38.0536	38.0498	33.8991	38.0954	38.1125	37.5656	37.4988	37.4894	36.7523	36.9322	40.0830	40.1588	40.0433	40.1144
43.0433	44.8866		44.8815	44.8708	42.5341	42.4639	42.4418	42.4308	41.5288	41.8234	41.9171	42.1691	42.2523	42.9774	42.9484	42.8042	43.0492	43.2071	43.3138	42.8459	42.8327	42.8433	37.2815	42.8989	42.9034	42.4165	42.3463	42.3365	41.5551	41.7361	44.8541	44.9324	44.8140	44.8892
48.0481	49.8205		49.8138	49.8044	47.5139	47.4501	47.4269	47.4006	46.5383	46.8310	46.9242	47.1730	47.2572	47.9851	47.9376	47.7866	48.0346	48.1952	48.3084	47.8505	47.8280	47.8421	40.4544	47.9009	47.8899	47.4333	47.3614	47.3521	46.5693	46.7322	49.7867	49.8673	49.7469	49.8261
1.9118	-0.0859		-0.0958	-0.0730	2.4992	2.5593	2.6068	2.6235	3.5089	3.2244	3.1052	2.8658	2.7722	2.0263	2.0887	2.2022	1.9277	1.8147	1.7017	2.1963	2.1819	2.1780	-6.0878	2.1462	2.1179	2.5372	2.5912	2.6092	3.4948	3.3081	-0.0746	-0.1227	-0.0495	-0.0729
1.0004	1.0046		1.0049	1.0047	0.9984	0.9986	0.9981	0.9981	0.9988	0.9987	0.9992	0.9990	0.9992	0.9996	0.9990	0.9997	1.0004	0.9993	0.9995	0.9987	0.9994	0.9993	1.3735	0.9988	0.9994	1.0009	1.0013	1.0011	0.9985	0.9989	1.0051	1.0044	1.0054	1.0042
-0.0150	-0.0111		-0.0121	-0.0103	-0.0215	-0.0168	-0.0177	-0.0202	-0.0052	0.0100	-0.0077	-0.0080	-0.0013	-0.0137	-0.0219	-0.0106	-0.0082	-0.0224	-0.0029	-0.0123	-0.0192	-0.0141	0.5983	-0.0190	-0.0214	-0.0081	-0.0184	-0.0193	0.0069	0.0000	-0.0118	-0.0111	-0.0123	-0.0118
-0.0374	-0.0293		-0.0302	-0.0299	-0.0358	-0.0418	-0.0358	-0.0383	-0.0376	-0.0411	-0.0344	-0.0278	-0.0375	-0.0301	-0.0214	-0.0358	-0.0269	-0.0239	-0.0312	-0.0329	-0.0277	-0.0304	-0.5417	-0.0281	-0.0313	-0.0304	-0.0230	-0.0250	-0.0412	-0.0305	-0.0304	-0.0280	-0.0313	-0.0295
0.0060	-0.0203		-0.0205	-0.0205	-0.0084	-0.0078	-0.0061	-0.0098	0.0064	-0.0006	0.0055	0.0096	0.0059	0.0093	0.0138	0.0095	0.0026	0.0092	0.0059	0.0077	0.0107	0.0130	-0.3902	0.0170	0.0164	0.0152	0.0125	0.0220	0.0015	-0.0026	-0.0198	-0.0210	-0.0193	-0.0200
0.0332	0.0515		0.0520	0.0510	0.0263	0.0296	0.0245	0.0287	0.0546	0.0383	0.0494	0.0357	0.0402	0.0361	0.0277	0.0329	0.0315	0.0334	0.0235	0.0415	0.0330	0.0323	-0.4945	0.0360	0.0378	0.0413	0.0470	0.0379	0.0462	0.0393	0.0521	0.0516	0.0532	0.0521
0.0185	0.0176		0.0186	0.0177	0.0201	0.0197	0.0208	0.0247	-0.0127	-0.0059	-0.0074	-0.0048	-0.0070	0.0035	0.0013	-0.0023	-0.0026	-0.0007	-0.0005	-0.0018	0.0040	0.0018	0.4350	-0.0024	0.0008	0.0060	0.0062	0.0132	-0.0125	-0.0043	0.0189	0.0161	0.0203	0.0179
0.0088	0.0095		0.0113	0.0097	0.0006	-0.0030	-0.0084	-0.0027	0.0183	0.0210	0.0230	0.0141	0.0251	0.0211	0.0247	0.0250	0.0232	0.0253	0.0205	0.0216	0.0195	0.0206	0.5233	0.0237	0.0201	0.0291	0.0342	0.0263	0.0191	0.0140	0.0101	0.0089	0.0104	0.0094
0.0352	0.0113		0.0122	0.0112	0.1126	0.1146	0.1098	0.1065	-0.0070	-0.0107	-0.0115	-0.0042	-0.0092	-0.0008	-0.0013	0.0109	0.0014	0.0120	0.0073	0.0023	0.0117	0.0005	0.2734	-0.0060	0.0062	-0.0619	-0.0624	-0.0603	-0.0062	-0.0011	0.0110	0.0126	0.0090	0.0113
-0.0281	0.0072		0.0061	0.0072	-0.0330	-0.0368	-0.0315	-0.0247	-0.0102	-0.0061	-0.0101	-0.0068	-0.0087	-0.0154	-0.0037	-0.0053	-0.0043	-0.0087	-0.0074	-0.0122	-0.0121	-0.0094	0.1192	-0.0085	-0.0059	-0.0063	-0.0088	-0.0079	-0.0104	-0.0026	0.0062	0.0072	0.0053	0.0063
					0.113	0.115	0.110	0.106															0.598											

32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66
18.5659	20.4805		20.4831	20.4672	18.0074	17.9493	17.9093	17.8896	17.0056	17.3079	17.4005	17.6436	17.7404	18.4682	18.4069	18.2922	18.5560	18.6761	18.8052	18.3146	18.3103	18.3211		18.3577	18.3724	17.9378	17.8677	17.8519	17.0368	17.2112	20.4594	20.5214	20.4275	20.4745
21.2425	23.1501		23.1519	23.1351	20.6973	20.6281	20.5963	20.5765	19.6762	19.9602	20.0759	20.3265	20.4063	21.1529	21.1099	20.9677	21.2361	21.3765	21.4784	20.9975	21.0035	21.0066		21.0520	21.0642	20.6129	20.5597	20.5433	19.6926	19.8836	23.1274	23.1928	23.0941	23.1455
24.0848	25.9463		25.9479	25.9315	23.5291	23.4661	23.4313	23.4103	22.5236	22.8043	22.9181	23.1666	23.2519	23.9936	23.9478	23.8139	24.0644	24.2116	24.3169	23.8417	23.8437	23.8521		23.9006	23.9136	23.4559	23.3916	23.3873	22.5394	22.7148	25.9238	25.9874	25.8911	25.9431
28.1104	29.9994		30.0005	29.9841	27.5701	27.5092	27.4695	27.4564	26.5764	26.8485	26.9651	27.1967	27.2894	28.0222	27.9655	27.8384	28.0915	28.2386	28.3366	27.8806	27.8685	27.8742		27.9247	27.9376	27.4782	27.4211	27.3987	26.5900	26.7612	29.9752	30.0422	29.9418	29.9981
31.0945	32.9519		32.9526	32.9370	30.5686	30.5035	30.4714	30.4579	29.5124	29.8081	29.9105	30.1591	30.2446	30.9909	30.9419	30.8039	31.0561	31.2066	31.3142	30.8411	30.8413	30.8459		30.8899	30.9025	30.4401	30.3765	30.3708	29.5355	29.7209	32.9271	32.9938	32.8931	32.9514
34.0836	35.9301		35.9306	35.9151	33.5537	33.4851	33.4479	33.4361	32.5469	32.8389	32.9433	33.1811	33.2790	34.0099	33.9682	33.8321	34.0805	34.2348	34.3368	33.8684	33.8588	33.8668		33.9199	33.9237	33.4604	33.4006	33.3805	32.5716	32.7426	35.9032	35.9735	35.8672	35.9302
38.3084	40.1127		40.1111	40.0971	37.8724	37.8088	37.7743	37.7533	36.7265	37.0126	37.1120	37.3669	37.4480	38.1898	38.1463	38.0191	38.2569	38.4245	38.5258	38.0543	38.0536	38.0498		38.0954	38.1125	37.5656	37.4988	37.4894	36.7523	36.9322	40.0830	40.1588	40.0433	40.1144
43.0433	44.8866		44.8815	44.8708	42.5341	42.4639	42.4418	42.4308	41.5288	41.8234	41.9171	42.1691	42.2523	42.9774	42.9484	42.8042	43.0492	43.2071	43.3138	42.8459	42.8327	42.8433		42.8989	42.9034	42.4165	42.3463	42.3365	41.5551	41.7361	44.8541	44.9324	44.8140	44.8892
48.0481	49.8205		49.8138	49.8044	47.5139	47.4501	47.4269	47.4006	46.5383	46.8310	46.9242	47.1730	47.2572	47.9851	47.9376	47.7866	48.0346	48.1952	48.3084	47.8505	47.8280	47.8421		47.9009	47.8899	47.4333	47.3614	47.3521	46.5693	46.7322	49.7867	49.8673	49.7469	49.8261
1.9118	-0.0859		-0.0958	-0.0730	2.4992	2.5593	2.6068	2.6235	3.5089	3.2244	3.1052	2.8658	2.7722	2.0263	2.0887	2.2022	1.9277	1.8147	1.7017	2.1963	2.1819	2.1780		2.1462	2.1179	2.5372	2.5912	2.6092	3.4948	3.3081	-0.0746	-0.1227	-0.0495	-0.0729
1.0004	1.0046		1.0049	1.0047	0.9984	0.9986	0.9981	0.9981	0.9988	0.9987	0.9992	0.9990	0.9992	0.9996	0.9990	0.9997	1.0004	0.9993	0.9995	0.9987	0.9994	0.9993		0.9988	0.9994	1.0009	1.0013	1.0011	0.9985	0.9989	1.0051	1.0044	1.0054	1.0042
-0.0150	-0.0111		-0.0121	-0.0103	-0.0215	-0.0168	-0.0177	-0.0202	-0.0052	0.0100	-0.0077	-0.0080	-0.0013	-0.0137	-0.0219	-0.0106	-0.0082	-0.0224	-0.0029	-0.0123	-0.0192	-0.0141		-0.0190	-0.0214	-0.0081	-0.0184	-0.0193	0.0069	0.0000	-0.0118	-0.0111	-0.0123	-0.0118
-0.0374	-0.0293		-0.0302	-0.0299	-0.0358	-0.0418	-0.0358	-0.0383	-0.0376	-0.0411	-0.0344	-0.0278	-0.0375	-0.0301	-0.0214	-0.0358	-0.0269	-0.0239	-0.0312	-0.0329	-0.0277	-0.0304		-0.0281	-0.0313	-0.0304	-0.0230	-0.0250	-0.0412	-0.0305	-0.0304	-0.0280	-0.0313	-0.0295
0.0060	-0.0203		-0.0205	-0.0205	-0.0084	-0.0078	-0.0061	-0.0098	0.0064	-0.0006	0.0055	0.0096	0.0059	0.0093	0.0138	0.0095	0.0026	0.0092	0.0059	0.0077	0.0107	0.0130		0.0170	0.0164	0.0152	0.0125	0.0220	0.0015	-0.0026	-0.0198	-0.0210	-0.0193	-0.0200
0.0332	0.0515		0.0520	0.0510	0.0263	0.0296	0.0245	0.0287	0.0546	0.0383	0.0494	0.0357	0.0402	0.0361	0.0277	0.0329	0.0315	0.0334	0.0235	0.0415	0.0330	0.0323		0.0360	0.0378	0.0413	0.0470	0.0379	0.0462	0.0393	0.0521	0.0516	0.0532	0.0521
0.0185	0.0176		0.0186	0.0177	0.0201	0.0197	0.0208	0.0247	-0.0127	-0.0059	-0.0074	-0.0048	-0.0070	0.0035	0.0013	-0.0023	-0.0026	-0.0007	-0.0005	-0.0018	0.0040	0.0018		-0.0024	0.0008	0.0060	0.0062	0.0132	-0.0125	-0.0043	0.0189	0.0161	0.0203	0.0179
0.0088	0.0095		0.0113	0.0097	0.0006	-0.0030	-0.0084	-0.0027	0.0183	0.0210	0.0230	0.0141	0.0251	0.0211	0.0247	0.0250	0.0232	0.0253	0.0205	0.0216	0.0195	0.0206		0.0237	0.0201	0.0291	0.0342	0.0263	0.0191	0.0140	0.0101	0.0089	0.0104	0.0094
-0.0281	0.0072		0.0061	0.0072	-0.0330	-0.0368	-0.0315	-0.0247	-0.0102	-0.0061	-0.0101	-0.0068	-0.0087	-0.0154	-0.0037	-0.0053	-0.0043	-0.0087	-0.0074	-0.0122	-0.0121	-0.0094		-0.0085	-0.0059	-0.0063	-0.0088	-0.0079	-0.0104	-0.0026	0.0062	0.0072	0.0053	0.0063

Tc 236 was broken

67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101
20.4785	20.4535	20.4791	18.7823	18.2080	18.3174	20.5319	20.5051	20.5952		17.9474	17.9145	20.4360	20.5108	20.4739	19.0379	19.2401	19.3390	19.9699	19.9264	19.9308	20.0551	20.1558	20.2180	20.3326	19.7042	19.6325	19.4753	19.4803	19.4846	19.3608	19.2486	19.2548	18.8833	19.0682
23.1485	23.1208	23.1496	21.4808	20.8863	21.0077	23.2034	23.1759	23.2690		20.6249	20.6067	23.1057	23.1826	23.1439	21.7441	21.9469	22.0355	22.6625	22.6259	22.6132	22.7357	22.8561	22.9092	23.0211	22.3902	22.3112	22.1498	22.1609	22.1725	22.0287	21.9149	21.9279	21.5901	21.7710
25.9445	25.9164	25.9464	24.3221	23.7262	23.8509	25.9976	25.9714	26.0604		23.4571	23.4362	25.9051	25.9788	25.9406	24.5240	24.7282	24.8138	25.4291	25.3894	25.3859	25.5060	25.6113	25.6655	25.7759	25.1574	25.0918	24.9291	24.9405	24.9489	24.8057	24.6928	24.7105	24.3820	24.5528
29.9987	29.9672	30.0016	28.3426	27.7427	27.8698	30.0528	30.0264	30.1168		27.4801	27.4620	29.9604	30.0345	29.9948	28.5672	28.7800	28.8611	29.4879	29.4315	29.4416	29.5554	29.6644	29.7210	29.8169	29.2111	29.1394	28.9800	28.9847	29.0014	28.8465	28.7275	28.7542	28.4295	28.6169
32.9509	32.9179	32.9546	31.3072	30.7167	30.8306	33.0049	32.9784	33.0676		30.4477	30.4128	32.9144	32.9874	32.9471	31.4496	31.6596	31.7638	32.3998	32.3671	32.3590	32.4916	32.6124	32.6641	32.7807	32.1404	32.0814	31.9222	31.9338	31.9438	31.7414	31.6280	31.6456	31.3148	31.4899
35.9285	35.8922	35.9329	34.3355	33.7341	33.8586	35.9850	35.9572	36.0491		33.4599	33.4328	35.8923	35.9675	35.9248	34.5601	34.7686	34.8605	35.4835	35.4307	35.4213	35.5589	35.6521	35.7126	35.8162	35.1809	35.1214	34.9569	34.9654	34.9706	34.7887	34.6612	34.6869	34.4218	34.6053
40.1118	40.0696	40.1176	38.5170	37.9229	38.0376	40.1718	40.1434	40.2403		37.5654	37.5322	40.0750	40.1530	40.1076	38.7445	38.9395	39.0347	39.6418	39.5845	39.5756	39.7034	39.8087	39.8540	39.9570	39.3463	39.2803	39.1288	39.1289	39.1422	38.9379	38.8199	38.8451	38.6114	38.7869
44.8858	44.8401	44.8927	43.3058	42.7109	42.8224	44.9456	44.9188	45.0139		42.4166	42.3695	44.8510	44.9263	44.8809	43.4815	43.6625	43.7778	44.3836	44.3461	44.3342	44.4699	44.5792	44.6115	44.7292	44.1044	44.0561	43.8826	43.9035	43.9092	43.7077	43.5907	43.6179	43.3526	43.5075
49.8216	49.7715	49.8289	48.2950	47.7041	47.8153	49.8806	49.8552	49.9492		47.4356	47.3776	49.7883	49.8626	49.8161	48.5129	48.6823	48.7993	49.3851	49.3301	49.3270	49.4502	49.5634	49.5839	49.6960	49.0929	49.0441	48.8781	48.8928	48.8994	48.7137	48.5847	48.6148	48.3961	48.5392
-0.0823	-0.0761	-0.0778	1.7013	2.2862	2.1609	-0.1303	-0.1028	-0.1893		2.5241	2.5228	-0.0339	-0.1088	-0.0790	1.4374	1.2033	1.1346	0.4740	0.5076	0.5045	0.3880	0.2800	0.1919	0.0828	0.7250	0.8182	0.9717	0.9699	0.9588	1.0491	1.1535	1.1546	1.6115	1.4010
1.0045	1.0054	1.0043	0.9997	0.9999	1.0001	1.0043	1.0043	1.0041		1.0012	1.0023	1.0042	1.0042	1.0046	1.0012	1.0023	1.0014	1.0026	1.0030	1.0033	1.0029	1.0029	1.0041	1.0041	1.0035	1.0026	1.0029	1.0027	1.0027	1.0052	1.0057	1.0050	1.0001	1.0012
-0.0112	-0.0122	-0.0112	-0.0229	-0.0076	-0.0191	-0.0106	-0.0104	-0.0100		-0.0063	-0.0211	-0.0117	-0.0118	-0.0118	-0.0023	-0.0130	0.0002	-0.0032	-0.0060	0.0001	0.0021	-0.0054	-0.0073	-0.0018	-0.0011	0.0024	0.0034	0.0018	-0.0037	0.0109	0.0109	0.0050	-0.0042	-0.0077
-0.0291	-0.0305	-0.0292	-0.0254	-0.0296	-0.0283	-0.0277	-0.0281	-0.0253		-0.0254	-0.0227	-0.0308	-0.0287	-0.0296	0.0071	-0.0001	0.0004	-0.0035	0.0018	-0.0087	-0.0093	0.0027	-0.0051	-0.0024	-0.0057	-0.0119	-0.0144	-0.0104	-0.0085	-0.0074	-0.0077	-0.0085	0.0027	-0.0016
-0.0204	-0.0197	-0.0205	0.0150	0.0101	0.0153	-0.0215	-0.0208	-0.0225		0.0103	0.0133	-0.0196	-0.0209	-0.0202	-0.0098	-0.0125	-0.0175	-0.0296	-0.0264	-0.0270	-0.0309	-0.0340	-0.0374	-0.0363	-0.0287	-0.0240	-0.0270	-0.0235	-0.0248	-0.0159	-0.0141	-0.0121	-0.0052	-0.0164
0.0521	0.0529	0.0521	0.0341	0.0262	0.0347	0.0510	0.0515	0.0504		0.0383	0.0485	0.0528	0.0519	0.0525	0.0382	0.0485	0.0354	0.0399	0.0278	0.0419	0.0304	0.0309	0.0347	0.0211	0.0393	0.0342	0.0356	0.0314	0.0388	0.0460	0.0435	0.0516	0.0425	0.0526
0.0177	0.0195	0.0177	-0.0024	-0.0001	-0.0040	0.0158	0.0162	0.0132		0.0096	0.0061	0.0193	0.0172	0.0181	-0.0760	-0.0654	-0.0580	-0.0405	-0.0277	-0.0312	-0.0247	-0.0125	-0.0101	-0.0031	-0.0210	-0.0160	-0.0137	-0.0117	-0.0110	-0.0441	-0.0397	-0.0426	-0.0721	-0.0708
0.0087	0.0099	0.0088	0.0249	0.0170	0.0245	0.0086	0.0076	0.0069		0.0255	0.0331	0.0097	0.0098	0.0095	0.0381	0.0507	0.0430	0.0514	0.0452	0.0410	0.0516	0.0361	0.0508	0.0448	0.0303	0.0320	0.0298	0.0279	0.0242	0.0192	0.0107	0.0138	0.0350	0.0483
0.0110	0.0098	0.0113	0.0050	0.0054	0.0041	0.0133	0.0117	0.0152		-0.0639	-0.0580	0.0100	0.0129	0.0113	0.0274	0.0310	0.0230	0.0207	0.0115	0.0089	0.0083	0.0048	0.0092	0.0025	0.0103	0.0019	0.0137	0.0025	0.0071	-0.0101	-0.0071	-0.0073	0.0249	0.0350
0.0065	0.0061	0.0069	-0.0079	-0.0070	-0.0104	0.0075	0.0074	0.0084		-0.0066	-0.0094	0.0061	0.0063	0.0063	-0.0300	-0.0352	-0.0274	-0.0249	-0.0126	-0.0170	-0.0112	-0.0107	-0.0138	-0.0059	-0.0148	-0.0098	-0.0187	-0.0103	-0.0130	-0.0154	-0.0093	-0.0108	-0.0336	-0.0386

67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101
20.4785	20.4535	20.4791	18.7823	18.2080	18.3174	20.5319	20.5051	20.5952		17.9474	17.9145	20.4360	20.5108	20.4739	19.0379	19.2401	19.3390	19.9699	19.9264	19.9308	20.0551	20.1558	20.2180	20.3326	19.7042	19.6325	19.4753	19.4803	19.4846	19.3608	19.2486	19.2548	18.8833	19.0682
23.1485	23.1208	23.1496	21.4808	20.8863	21.0077	23.2034	23.1759	23.2690		20.6249	20.6067	23.1057	23.1826	23.1439	21.7441	21.9469	22.0355	22.6625	22.6259	22.6132	22.7357	22.8561	22.9092	23.0211	22.3902	22.3112	22.1498	22.1609	22.1725	22.0287	21.9149	21.9279	21.5901	21.7710
25.9445	25.9164	25.9464	24.3221	23.7262	23.8509	25.9976	25.9714	26.0604		23.4571	23.4362	25.9051	25.9788	25.9406	24.5240	24.7282	24.8138	25.4291	25.3894	25.3859	25.5060	25.6113	25.6655	25.7759	25.1574	25.0918	24.9291	24.9405	24.9489	24.8057	24.6928	24.7105	24.3820	24.5528
29.9987	29.9672	30.0016	28.3426	27.7427	27.8698	30.0528	30.0264	30.1168		27.4801	27.4620	29.9604	30.0345	29.9948	28.5672	28.7800	28.8611	29.4879	29.4315	29.4416	29.5554	29.6644	29.7210	29.8169	29.2111	29.1394	28.9800	28.9847	29.0014	28.8465	28.7275	28.7542	28.4295	28.6169
32.9509	32.9179	32.9546	31.3072	30.7167	30.8306	33.0049	32.9784	33.0676		30.4477	30.4128	32.9144	32.9874	32.9471	31.4496	31.6596	31.7638	32.3998	32.3671	32.3590	32.4916	32.6124	32.6641	32.7807	32.1404	32.0814	31.9222	31.9338	31.9438	31.7414	31.6280	31.6456	31.3148	31.4899
35.9285	35.8922	35.9329	34.3355	33.7341	33.8586	35.9850	35.9572	36.0491		33.4599	33.4328	35.8923	35.9675	35.9248	34.5601	34.7686	34.8605	35.4835	35.4307	35.4213	35.5589	35.6521	35.7126	35.8162	35.1809	35.1214	34.9569	34.9654	34.9706	34.7887	34.6612	34.6869	34.4218	34.6053
40.1118	40.0696	40.1176	38.5170	37.9229	38.0376	40.1718	40.1434	40.2403		37.5654	37.5322	40.0750	40.1530	40.1076	38.7445	38.9395	39.0347	39.6418	39.5845	39.5756	39.7034	39.8087	39.8540	39.9570	39.3463	39.2803	39.1288	39.1289	39.1422	38.9379	38.8199	38.8451	38.6114	38.7869
44.8858	44.8401	44.8927	43.3058	42.7109	42.8224	44.9456	44.9188	45.0139		42.4166	42.3695	44.8510	44.9263	44.8809	43.4815	43.6625	43.7778	44.3836	44.3461	44.3342	44.4699	44.5792	44.6115	44.7292	44.1044	44.0561	43.8826	43.9035	43.9092	43.7077	43.5907	43.6179	43.3526	43.5075
49.8216	49.7715	49.8289	48.2950	47.7041	47.8153	49.8806	49.8552	49.9492		47.4356	47.3776	49.7883	49.8626	49.8161	48.5129	48.6823	48.7993	49.3851	49.3301	49.3270	49.4502	49.5634	49.5839	49.6960	49.0929	49.0441	48.8781	48.8928	48.8994	48.7137	48.5847	48.6148	48.3961	48.5392
-0.0823	-0.0761	-0.0778	1.7013	2.2862	2.1609	-0.1303	-0.1028	-0.1893		2.5241	2.5228	-0.0339	-0.1088	-0.0790	1.4374	1.2033	1.1346	0.4740	0.5076	0.5045	0.3880	0.2800	0.1919	0.0828	0.7250	0.8182	0.9717	0.9699	0.9588	1.0491	1.1535	1.1546	1.6115	1.4010
1.0045	1.0054	1.0043	0.9997	0.9999	1.0001	1.0043	1.0043	1.0041		1.0012	1.0023	1.0042	1.0042	1.0046	1.0012	1.0023	1.0014	1.0026	1.0030	1.0033	1.0029	1.0029	1.0041	1.0041	1.0035	1.0026	1.0029	1.0027	1.0027	1.0052	1.0057	1.0050	1.0001	1.0012
-0.0112	-0.0122	-0.0112	-0.0229	-0.0076	-0.0191	-0.0106	-0.0104	-0.0100		-0.0063	-0.0211	-0.0117	-0.0118	-0.0118	-0.0023	-0.0130	0.0002	-0.0032	-0.0060	0.0001	0.0021	-0.0054	-0.0073	-0.0018	-0.0011	0.0024	0.0034	0.0018	-0.0037	0.0109	0.0109	0.0050	-0.0042	-0.0077
-0.0291	-0.0305	-0.0292	-0.0254	-0.0296	-0.0283	-0.0277	-0.0281	-0.0253		-0.0254	-0.0227	-0.0308	-0.0287	-0.0296	0.0071	-0.0001	0.0004	-0.0035	0.0018	-0.0087	-0.0093	0.0027	-0.0051	-0.0024	-0.0057	-0.0119	-0.0144	-0.0104	-0.0085	-0.0074	-0.0077	-0.0085	0.0027	-0.0016
-0.0204	-0.0197	-0.0205	0.0150	0.0101	0.0153	-0.0215	-0.0208	-0.0225		0.0103	0.0133	-0.0196	-0.0209	-0.0202	-0.0098	-0.0125	-0.0175	-0.0296	-0.0264	-0.0270	-0.0309	-0.0340	-0.0374	-0.0363	-0.0287	-0.0240	-0.0270	-0.0235	-0.0248	-0.0159	-0.0141	-0.0121	-0.0052	-0.0164
0.0521	0.0529	0.0521	0.0341	0.0262	0.0347	0.0510	0.0515	0.0504		0.0383	0.0485	0.0528	0.0519	0.0525	0.0382	0.0485	0.0354	0.0399	0.0278	0.0419	0.0304	0.0309	0.0347	0.0211	0.0393	0.0342	0.0356	0.0314	0.0388	0.0460	0.0435	0.0516	0.0425	0.0526
0.0177	0.0195	0.0177	-0.0024	-0.0001	-0.0040	0.0158	0.0162	0.0132		0.0096	0.0061	0.0193	0.0172	0.0181	-0.0760	-0.0654	-0.0580	-0.0405	-0.0277	-0.0312	-0.0247	-0.0125	-0.0101	-0.0031	-0.0210	-0.0160	-0.0137	-0.0117	-0.0110	-0.0441	-0.0397	-0.0426	-0.0721	-0.0708
0.0087	0.0099	0.0088	0.0249	0.0170	0.0245	0.0086	0.0076	0.0069		0.0255	0.0331	0.0097	0.0098	0.0095	0.0381	0.0507	0.0430	0.0514	0.0452	0.0410	0.0516	0.0361	0.0508	0.0448	0.0303	0.0320	0.0298	0.0279	0.0242	0.0192	0.0107	0.0138	0.0350	0.0483
0.0065	0.0061	0.0069	-0.0079	-0.0070	-0.0104	0.0075	0.0074	0.0084		-0.0066	-0.0094	0.0061	0.0063	0.0063	-0.0300	-0.0352	-0.0274	-0.0249	-0.0126	-0.0170	-0.0112	-0.0107	-0.0138	-0.0059	-0.0148	-0.0098	-0.0187	-0.0103	-0.0130	-0.0154	-0.0093	-0.0108	-0.0336	-0.0386

102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119
19.2025	19.2705	19.6448	20.4996	20.5505	20.4618	20.1254	20.1842	20.2668	20.2795	19.6581	19.5662	19.5018	19.4687	19.4890	19.2728	19.2394	19.2483
21.9231	21.9701	22.3391	23.1667	23.2234	23.1310	22.8102	22.8708	22.9665	22.9668	22.3392	22.2484	22.1911	22.1472	22.1712	21.9489	21.9059	21.9169
24.6949	24.7566	25.1058	25.9587	26.0171	25.9281	25.5859	25.6328	25.7178	25.7325	25.1085	25.0156	24.9709	24.9302	24.9453	24.7213	24.6864	24.6858
28.7462	28.8149	29.1559	30.0078	30.0733	29.9821	29.6344	29.6879	29.7549	29.7925	29.1509	29.0734	29.0201	28.9826	28.9924	28.7616	28.7351	28.7191
31.6393	31.6971	32.0599	32.9569	33.0255	32.9349	32.5895	32.6262	32.7198	32.7412	32.0943	32.0084	31.9669	31.9207	31.9368	31.6616	31.6223	31.6263
34.7409	34.8078	35.1545	35.9309	36.0064	35.9116	35.6387	35.6801	35.7558	35.7885	35.1258	35.0401	35.0091	34.9530	34.9669	34.6991	34.6664	34.6574
38.9119	38.9865	39.3084	40.1070	40.1943	40.0938	39.7946	39.8249	39.8978	39.9342	39.2809	39.2036	39.1738	39.1268	39.1345	38.8579	38.8267	38.8143
43.6507	43.7090	44.0484	44.8725	44.9674	44.8681	44.5609	44.5881	44.6733	44.6940	44.0496	43.9615	43.9409	43.9005	43.9061	43.6287	43.5925	43.5870
48.6821	48.7405	49.0537	49.8002	49.9029	49.8028	49.5544	49.5714	49.6318	49.6658	49.0297	48.9516	48.9320	48.8850	48.8922	48.6378	48.5969	48.5931
1.2589	1.1987	0.7939	-0.1345	-0.1470	-0.0671	0.3348	0.2450	0.1431	0.1470	0.7633	0.8620	0.9531	0.9864	0.9554	1.1407	1.1743	1.1606
1.0013	1.0012	1.0030	1.0060	1.0042	1.0046	1.0020	1.0034	1.0041	1.0033	1.0040	1.0036	1.0021	1.0024	1.0029	1.0049	1.0050	1.0055

																		Std deviation for row
-0.0137	-0.0072	-0.0025	-0.0126	-0.0112	-0.0115	-0.0001	-0.0018	-0.0076	-0.0074	0.0007	-0.0006	-0.0044	0.0019	0.0018	0.0088	0.0100	0.0149	0.057
0.0103	-0.0043	-0.0003	-0.0295	-0.0272	-0.0301	-0.0099	-0.0060	0.0031	-0.0114	-0.0074	-0.0087	-0.0095	-0.0132	-0.0080	-0.0019	-0.0102	-0.0019	0.050
-0.0142	-0.0143	-0.0252	-0.0209	-0.0218	-0.0201	-0.0286	-0.0345	-0.0344	-0.0367	-0.0269	-0.0314	-0.0238	-0.0235	-0.0259	-0.0159	-0.0158	-0.0177	0.038
0.0424	0.0489	0.0370	0.0524	0.0512	0.0524	0.0278	0.0345	0.0192	0.0365	0.0318	0.0411	0.0338	0.0387	0.0332	0.0444	0.0531	0.0378	0.050
-0.0609	-0.0653	-0.0503	0.0191	0.0156	0.0188	-0.0111	-0.0172	-0.0039	-0.0052	-0.0130	-0.0132	-0.0132	-0.0162	-0.0140	-0.0413	-0.0452	-0.0391	0.047
0.0448	0.0491	0.0535	0.0109	0.0089	0.0092	0.0421	0.0471	0.0446	0.0521	0.0308	0.0295	0.0353	0.0234	0.0253	0.0113	0.0140	0.0087	0.049
0.0212	0.0330	0.0198	0.0119	0.0142	0.0105	0.0082	0.0061	0.0034	0.0112	0.0027	0.0082	0.0088	0.0072	0.0052	-0.0094	-0.0048	-0.0115	0.042
-0.0339	-0.0387	-0.0261	0.0058	0.0072	0.0067	-0.0160	-0.0143	-0.0016	-0.0135	-0.0094	-0.0166	-0.0142	-0.0075	-0.0092	-0.0149	-0.0152	-0.0125	0.018

0.5983 Max Diff
0.0494 std dev all data

102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119
19.2025	19.2705	19.6448	20.4996	20.5505	20.4618	20.1254	20.1842	20.2668	20.2795	19.6581	19.5662	19.5018	19.4687	19.4890	19.2728	19.2394	19.2483
21.9231	21.9701	22.3391	23.1667	23.2234	23.1310	22.8102	22.8708	22.9665	22.9668	22.3392	22.2484	22.1911	22.1472	22.1712	21.9489	21.9059	21.9169
24.6949	24.7566	25.1058	25.9587	26.0171	25.9281	25.5859	25.6328	25.7178	25.7325	25.1085	25.0156	24.9709	24.9302	24.9453	24.7213	24.6864	24.6858
28.7462	28.8149	29.1559	30.0078	30.0733	29.9821	29.6344	29.6879	29.7549	29.7925	29.1509	29.0734	29.0201	28.9826	28.9924	28.7616	28.7351	28.7191
31.6393	31.6971	32.0599	32.9569	33.0255	32.9349	32.5895	32.6262	32.7198	32.7412	32.0943	32.0084	31.9669	31.9207	31.9368	31.6616	31.6223	31.6263
34.7409	34.8078	35.1545	35.9309	36.0064	35.9116	35.6387	35.6801	35.7558	35.7885	35.1258	35.0401	35.0091	34.9530	34.9669	34.6991	34.6664	34.6574
38.9119	38.9865	39.3084	40.1070	40.1943	40.0938	39.7946	39.8249	39.8978	39.9342	39.2809	39.2036	39.1738	39.1268	39.1345	38.8579	38.8267	38.8143
43.6507	43.7090	44.0484	44.8725	44.9674	44.8681	44.5609	44.5881	44.6733	44.6940	44.0496	43.9615	43.9409	43.9005	43.9061	43.6287	43.5925	43.5870
48.6821	48.7405	49.0537	49.8002	49.9029	49.8028	49.5544	49.5714	49.6318	49.6658	49.0297	48.9516	48.9320	48.8850	48.8922	48.6378	48.5969	48.5931
1.2589	1.1987	0.7939	-0.1345	-0.1470	-0.0671	0.3348	0.2450	0.1431	0.1470	0.7633	0.8620	0.9531	0.9864	0.9554	1.1407	1.1743	1.1606
1.0013	1.0012	1.0030	1.0060	1.0042	1.0046	1.0020	1.0034	1.0041	1.0033	1.0040	1.0036	1.0021	1.0024	1.0029	1.0049	1.0050	1.0055

																		Std deviation for row
-0.0137	-0.0072	-0.0025	-0.0126	-0.0112	-0.0115	-0.0001	-0.0018	-0.0076	-0.0074	0.0007	-0.0006	-0.0044	0.0019	0.0018	0.0088	0.0100	0.0149	0.008
0.0103	-0.0043	-0.0003	-0.0295	-0.0272	-0.0301	-0.0099	-0.0060	0.0031	-0.0114	-0.0074	-0.0087	-0.0095	-0.0132	-0.0080	-0.0019	-0.0102	-0.0019	0.014
-0.0142	-0.0143	-0.0252	-0.0209	-0.0218	-0.0201	-0.0286	-0.0345	-0.0344	-0.0367	-0.0269	-0.0314	-0.0238	-0.0235	-0.0259	-0.0159	-0.0158	-0.0177	0.015
0.0424	0.0489	0.0370	0.0524	0.0512	0.0524	0.0278	0.0345	0.0192	0.0365	0.0318	0.0411	0.0338	0.0387	0.0332	0.0444	0.0531	0.0378	0.009
-0.0609	-0.0653	-0.0503	0.0191	0.0156	0.0188	-0.0111	-0.0172	-0.0039	-0.0052	-0.0130	-0.0132	-0.0132	-0.0162	-0.0140	-0.0413	-0.0452	-0.0391	0.024
0.0448	0.0491	0.0535	0.0109	0.0089	0.0092	0.0421	0.0471	0.0446	0.0521	0.0308	0.0295	0.0353	0.0234	0.0253	0.0113	0.0140	0.0087	0.015
-0.0339	-0.0387	-0.0261	0.0058	0.0072	0.0067	-0.0160	-0.0143	-0.0016	-0.0135	-0.0094	-0.0166	-0.0142	-0.0075	-0.0092	-0.0149	-0.0152	-0.0125	0.013

0.0000 Max Diff
0.0248 std dev all data

Calculation of regression values used to correct themocouple readings for coldtrap experiment.

Conducted on April 25, 2004

Thermocouple check

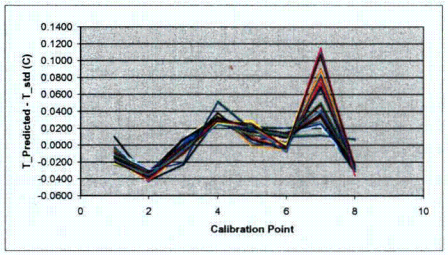
Thermometer reading oC	Thermocouple no. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
* 20.50	16.7709	17.2869	17.1284	17.6522	17.7509	18.4992	19.1915	18.3697	18.5575	18.7119	18.8122	19.0587	19.0672	18.3801	18.4424	18.4780	18.5100	18.5152	17.8998	17.8915	16.9473	17.1418	17.3322	17.6239	17.3036	18.0591	19.1278	18.4450	18.6618
* 23.20	19.4289	19.9695	19.8224	20.3191	20.4222	21.1814	21.8651	21.0356	21.2489	21.3828	21.4895	21.7350	21.7386	21.0568	21.1317	21.1576	21.1881	21.1942	20.5949	20.5721	19.6298	19.8316	20.0005	20.2949	19.9839	20.7279	21.8069	21.1310	21.3351
* 26.00	22.2585	22.8064	22.6541	23.1587	23.2613	24.0183	24.6831	23.8829	24.0874	24.2165	24.3264	24.5575	24.5569	23.9028	23.9760	24.0048	24.0291	24.0421	23.4227	23.4099	22.4631	22.6618	22.8396	23.1304	22.8218	23.5650	24.6356	23.9728	24.1716
* 30.00	26.3282	26.8564	26.7073	27.2076	27.3029	28.0475	28.7151	27.9142	28.1149	28.2415	28.3465	28.5892	28.5914	27.9334	27.9989	28.0328	28.0605	28.0685	27.4677	27.4529	26.5268	26.7166	26.8918	27.1841	26.8748	27.6030	28.6690	27.9955	28.1992
* 33.00	29.3143	29.8386	29.6909	30.1946	30.2856	31.0386	31.7084	30.9064	31.1076	31.2274	31.3431	31.5796	31.5850	30.9118	30.9902	31.0126	31.0514	31.0535	30.4706	30.4602	29.4995	29.7026	29.8676	30.1699	29.8508	30.5886	31.6553	30.9853	31.1939
* 36.00	32.3137	32.8401	32.6927	33.1874	33.2940	34.0379	34.7036	33.9020	34.1034	34.2244	34.3361	34.5752	34.5770	33.9124	33.9762	34.0056	34.0427	34.0504	33.4479	33.4336	32.5065	32.6986	32.8689	33.1668	32.8475	33.5932	34.6482	33.9825	34.1862
* 40.20	36.6257	37.1286	36.9898	37.4655	37.5602	38.2797	38.9068	38.1324	38.3370	38.4403	38.5503	38.7801	38.7849	38.1473	38.2148	38.2413	38.2730	38.2814	37.7684	37.7569	36.8182	36.9955	37.1659	37.4377	37.1312	37.8362	38.8649	38.2100	38.4110
* 45.00	41.3255	41.8396	41.6939	42.1784	42.2711	43.0071	43.6421	42.8726	43.0724	43.1766	43.2963	43.5295	43.5332	42.8820	42.9499	42.9734	43.0115	43.0131	42.4378	42.4193	41.5212	41.7066	41.8664	42.1578	41.8459	42.5658	43.5976	42.9540	43.1505
50.00	46.3324	46.8501	46.6939	47.1861	47.2783	48.0175	48.6553	47.8773	48.0800	48.1784	48.3066	48.5389	48.5456	47.8866	47.9547	47.9811	48.0178	48.0169	47.4170	47.3984	46.5218	46.7053	46.8686	47.1621	46.8533	47.5683	48.6066	47.9570	48.1651
Intercept	3.8019	3.2561	3.4096	2.8832	2.7767	2.0075	1.2830	2.1396	1.9402	1.7658	1.6774	1.4258	1.4228	2.1177	2.0467	2.0113	1.9878	1.9746	2.6104	2.6211	3.6097	3.3998	3.2079	2.9122	3.2295	2.4567	1.3488	2.0501	1.8387
Slope	0.9963	0.9970	0.9969	0.9979	0.9982	0.9990	1.0010	0.9991	0.9991	1.0007	1.0000	1.0004	1.0004	0.9994	0.9995	0.9997	0.9994	0.9996	0.9981	0.9983	0.9963	0.9969	0.9976	0.9977	0.9975	0.9989	1.0005	0.9994	0.9996

Difference between the corrected temperature reading and the standard thermometer reading. Corrected Temperature Reading (applied Slope and Offset to the above reading).

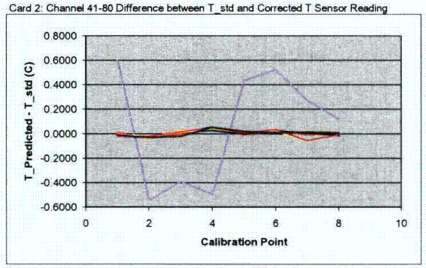
0.0099	-0.0085	-0.0158	-0.0025	-0.0052	-0.0123	-0.0070	-0.0068	-0.0199	-0.0087	-0.0106	-0.0074	-0.0025	-0.0134	-0.0210	-0.0164	-0.0135	-0.0171	-0.0230	-0.0183	-0.0066	-0.0121	-0.0021	-0.0043	-0.0095	-0.0046	-0.0137	-0.0168	-0.0074
-0.0420	-0.0340	-0.0302	-0.0413	-0.0389	-0.0329	-0.0308	-0.0432	-0.0309	-0.0359	-0.0334	-0.0299	-0.0300	-0.0382	-0.0331	-0.0376	-0.0370	-0.0391	-0.0329	-0.0423	-0.0341	-0.0307	-0.0404	-0.0394	-0.0357	-0.0387	-0.0331	-0.0325	-0.0353
-0.0231	-0.0055	-0.0074	-0.0079	-0.0051	0.0011	-0.0100	0.0015	0.0048	-0.0002	0.0035	-0.0062	-0.0106	0.0060	0.0097	0.0086	0.0023	0.0078	-0.0103	-0.0094	-0.0114	-0.0094	-0.0083	-0.0104	-0.0049	-0.0048	-0.0031	0.0074	0.0000
0.0314	0.0324	0.0331	0.0323	0.0292	0.0261	0.0259	0.0294	0.0286	0.0277	0.0235	0.0272	0.0255	0.0342	0.0304	0.0354	0.0312	0.0327	0.0272	0.0267	0.0371	0.0328	0.0341	0.0340	0.0382	0.0287	0.0324	0.0276	0.0259
0.0063	0.0058	0.0074	0.0129	0.0063	0.0141	0.0221	0.0189	0.0184	0.0158	0.0201	0.0189	0.0203	0.0107	0.0201	0.0142	0.0203	0.0165	0.0245	0.0287	-0.0014	0.0093	0.0027	0.0130	0.0068	0.0109	0.0203	0.0154	0.0193
-0.0056	-0.0017	-0.0003	-0.0007	0.0091	0.0103	0.0201	0.0119	0.0113	0.0149	0.0130	0.0157	0.0135	0.0096	0.0044	0.0063	0.0098	0.0123	-0.0036	-0.0030	-0.0057	-0.0040	-0.0034	0.0031	-0.0039	0.0121	0.0147	0.0107	0.0103
0.0902	0.0740	0.0834	0.0682	0.0674	0.0478	0.0273	0.0386	0.0410	0.0338	0.0272	0.0225	0.0231	0.0419	0.0408	0.0407	0.0375	0.0417	0.1089	0.1129	0.0898	0.0794	0.0832	0.0642	0.0693	0.0503	0.0336	0.0355	0.0333
-0.0276	-0.0290	-0.0273	-0.0290	-0.0303	-0.0297	-0.0328	-0.0253	-0.0281	-0.0264	-0.0268	-0.0261	-0.0268	-0.0262	-0.0267	-0.0287	-0.0269	-0.0283	-0.0304	-0.0328	-0.0247	-0.0242	-0.0279	-0.0266	-0.0277	-0.0254	-0.0313	-0.0235	-0.0293

List Maximum Diff (T_sensor- T_std) (only list if >0.1 C) 0.109 0.113

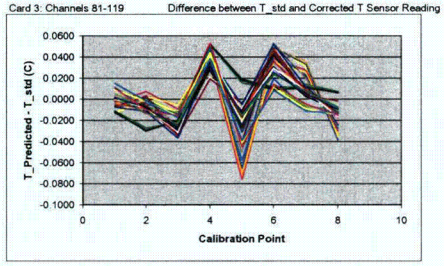
Card 1: Channel 1-40 Difference between T_std and Corrected T Sensor Reading



Card 2: Channel 41-80 Difference between T_std and Corrected T Sensor Reading



Card 3: Channels 81-119 Difference between T_std and Corrected T Sensor Reading



Conducted on April 26, 2006

Tc- 236 was replaced with new one on 4/26/06 as it was discovered broken
Tc -215 was discovered hidden in group of thermocouples and repositioned for calibration

Thermocouple check

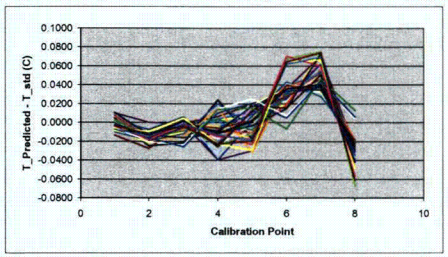
Thermometer reading oC	Thermocouple no. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
* 20.50	16.8864	17.3934	17.2454	17.7321	17.8357	18.5421	19.2024	18.4407	18.6142	18.7670	18.8675	19.0982	19.1016	18.4566	18.5184	18.5493	18.5744	18.5858	17.9604	17.9389	17.0629	17.2638	17.4233	17.7176	17.4342	18.1364	19.1498	18.5245	18.7046
* 23.00	19.3648	19.8829	19.7389	20.2239	20.3350	21.0346	21.6991	20.9357	21.1083	21.2492	21.3575	21.5871	21.5921	20.9481	21.0084	21.0425	21.0689	21.0760	20.4468	20.4334	19.5441	19.7474	19.9213	20.2008	19.9153	20.6269	21.6490	21.0133	21.2003
* 26.00	22.3774	22.8997	22.7570	23.2456	23.3445	24.0691	24.7189	23.9543	24.1328	24.2677	24.3735	24.6021	24.6069	23.9657	24.0295	24.0594	24.0849	24.0866	23.4707	23.4624	22.5595	22.7662	22.9370	23.2236	22.9183	23.6396	24.6724	24.0348	24.2216
* 30.00	26.4356	26.9021	26.7818	27.2653	27.3215	28.0866	28.7081	27.9156	28.1534	28.2516	28.3668	28.6069	28.5832	27.9524	28.0289	28.0391	28.0896	28.0779	27.4655	27.4723	26.6036	26.7743	26.9804	27.2262	26.9313	27.6598	28.6552	28.0322	28.2265
* 33.00	29.4039	29.9043	29.7944	30.2589	30.3424	31.1076	31.7442	30.9621	31.1696	31.2689	31.4108	31.6399	31.6301	30.9920	31.0333	31.0626	31.1081	31.1053	30.4866	30.4676	29.5678	29.7821	29.9649	30.2261	29.9451	30.6548	31.7014	31.0649	31.2408
* 36.00	32.4634	32.9676	32.8160	33.3205	33.4199	34.1294	34.7884	33.9913	34.1995	34.3239	34.4148	34.6634	34.6601	33.9963	34.0796	34.0986	34.1323	34.1374	33.5760	33.5597	32.6481	32.8206	33.0084	33.2861	32.9691	33.6981	34.7334	34.0673	34.2852
* 40.20	36.6984	37.2146	37.0844	37.5480	37.6697	38.3458	38.9834	38.2349	38.4129	38.5221	38.6446	38.8660	38.8708	38.2442	38.2889	38.3231	38.3509	38.3554	37.7972	37.7731	36.8756	37.0858	37.2419	37.5248	37.2366	37.9194	38.9459	38.3089	38.4892
* 45.00	41.4345	41.9452	41.7747	42.2847	42.3888	43.0896	43.7512	42.9426	43.1709	43.2779	43.3680	43.6179	43.6156	42.9494	43.0328	43.0454	43.0819	43.0972	42.4694	42.4628	41.6234	41.7929	41.9682	42.2609	41.9301	42.6655	43.6989	43.0257	43.2473
50.00	46.4459	46.9639	46.8189	47.2996	47.4188	48.1047	48.7597	47.9781	48.1823	48.2839	48.3979	48.6258	48.6342	47.9936	48.0539	48.0763	48.1100	48.1164	47.5373	47.5178	46.6368	46.8223	46.9929	47.2794	46.9690	47.6758	48.7135	48.0626	48.2510
Intercept	3.6709	3.1727	3.3007	2.8202	2.7407	1.9923	1.3435	2.0929	1.9310	1.7658	1.6565	1.4287	1.4338	2.0695	2.0101	1.9737	1.9469	1.9476	2.5974	2.6068	3.5060	3.2924	3.1157	2.8444	3.1110	2.3993	1.3966	2.0016	1.8297
Slope	0.9969	0.9966	0.9970	0.9969	0.9963	0.9974	0.9974	0.9983	0.9971	0.9986	0.9986	0.9984	0.9983	0.9985	0.9984	0.9987	0.9985	0.9984	0.9968	0.9970	0.9964	0.9971	0.9972	0.9970	0.9980	0.9980	0.9973	0.9984	0.9978

Difference between the corrected temperature reading and the standard thermometer reading. Corrected Temperature Reading (applied Slope and Offset to the above reading).

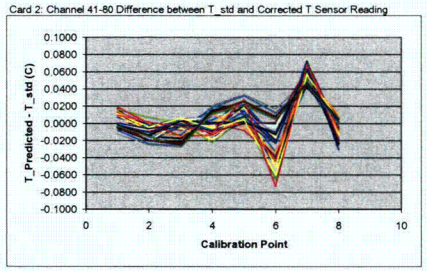
0.0046	0.0077	-0.0052	-0.0024	0.0100	-0.0135	-0.0031	0.0019	-0.0081	0.0064	-0.0027	-0.0036	0.0028	-0.0013	-0.0015	-0.0003	-0.0061	0.0032	0.0012	-0.0085	0.0079	0.0068	-0.0102	0.0083	0.0106	-0.0009	-0.0053	-0.0029	-0.0069
-0.0249	-0.0112	-0.0192	-0.0182	0.0000	-0.0275	-0.0129	-0.0075	-0.0212	-0.0148	-0.0162	-0.0187	-0.0110	-0.0135	-0.0156	-0.0102	-0.0153	-0.0107	-0.0203	-0.0215	-0.0197	-0.0167	-0.0192	-0.0160	-0.0132	-0.0153	-0.0129	-0.0181	-0.0166
-0.0217	-0.0046	-0.0100	-0.0059	-0.0017	-0.0008	-0.0008	0.0060	-0.0053	-0.0006	-0.0045	-0.0086	-0.0015	-0.0004	0.0006	0.0029	-0.0037	-0.0050	-0.0059	-0.0016	-0.0151	-0.0066	-0.0120	-0.0024	-0.0161	-0.0088	0.0023	-0.0013	-0.0021
0.0239	-0.0157	0.0028	0.0015	-0.0395	0.0064	-0.0217	-0.0396	0.0038	-0.0222	-0.0169	-0.0102	-0.0320	-0.0195	-0.0065	-0.0224	-0.0050	-0.0202	-0.0237	-0.0039	0.0146	-0.0100	0.0200	-0.0119	-0.0111	0.0033	-0.0256	-0.0102	-0.0059
-0.0171	-0.0236	0.0064	-0.0142	-0.0299	0.0195	0.0066	0.0017	0.0113	-0.0091	0.0227	0.0181	0.0098	0.0155	-0.0071	-0.0028	0.0091	0.0023	-0.0121	-0.0177	-0.0319	-0.0108	-0.0039	-0.0211	-0.0033	-0.0077	0.0124	0.0178	0.0017
0.0329	0.0295	0.0191	0.0380	0.0362	0.0336	0.0431	0.0257	0.0325	0.0416	0.0225	0.0367	0.0346	0.0153	0.0344	0.0295	0.0288	0.0294	0.0676	0.0651	0.0375	0.0191	0.0310	0.0297	0.0147	0.0294	0.0361	0.0155	0.0394
0.0546	0.0622	0.0748	0.0525	0.0702	0.0390	0.0273	0.0619	0.0338	0.0339	0.0463	0.0326	0.0380	0.0569	0.0368	0.0487	0.0412	0.0406	0.0754	0.0658	0.0499	0.0720	0.0526	0.0555	0.0737	0.0423	0.0372	0.0505	0.0342
-0.0241	-0.0231	-0.0489	-0.0254	-0.0283	-0.0294	-0.0171	-0.0385	-0.0218	-0.0170	-0.0370	-0.0231	-0.0253	-0.0449	-0.0270	-0.0349	-0.0348	-0.0253	-0.0671	-0.0587	-0.0193	-0.0344	-0.0345	-0.0227	-0.0421	-0.0212	-0.0226	-0.0402	-0.0183

List Maximum Diff (T_sensor- T_std) (only list if >0.1 C)

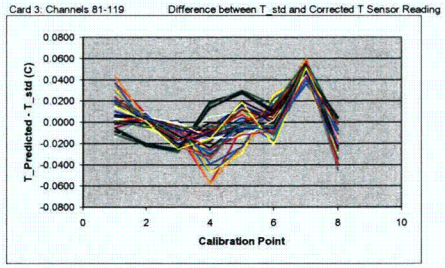
Card 1: Channel 1-40 Difference between T_std and Corrected T Sensor Reading



Card 2: Channel 41-80 Difference between T_std and Corrected T Sensor Reading



Card 3: Channels 81-119 Difference between T_std and Corrected T Sensor Reading



April 26 calibration data
Result: All of the predicted temperatures (calibrated TC) match the standard thermometer within 0.1 C, as expected.

Check April 25 reading using April 26 calibration (that is use Slope + Offset from Apr 26 calibration to predict April 25 data

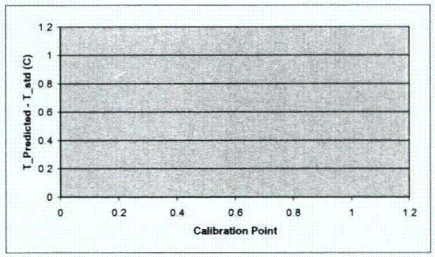
	Thermocouple no. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	-0.1106	-0.0985	-0.1219	-0.0819	-0.0745	-0.0563	-0.0141	-0.0690	-0.0647	-0.0485	-0.0579	-0.0431	-0.0317	-0.0777	-0.0775	-0.0715	-0.0704	-0.0673	-0.0592	-0.0558	-0.1072	-0.1149	-0.1009	-0.0851	-0.1197	-0.0780	-0.0273	-0.0823	-0.0495
	-0.1609	-0.1250	-0.1359	-0.1233	-0.1131	-0.0810	-0.0473	-0.1077	-0.0809	-0.0814	-0.0845	-0.0710	-0.0648	-0.1049	-0.0925	-0.0952	-0.0963	-0.0927	-0.0726	-0.0832	-0.1343	-0.1327	-0.1402	-0.1222	-0.1447	-0.1146	-0.0554	-0.1005	-0.0822
	-0.1402	-0.0976	-0.1126	-0.0925	-0.0846	-0.0514	-0.0364	-0.0654	-0.0506	-0.0517	-0.0515	-0.0531	-0.0513	-0.0632	-0.0528	-0.0517	-0.0594	-0.0494	-0.0537	-0.0541	-0.1111	-0.1107	-0.1091	-0.0953	-0.1125	-0.0832	-0.0344	-0.0632	-0.0519
	-0.0831	-0.0612	-0.0715	-0.0560	-0.0580	-0.0327	-0.0147	-0.0409	-0.0346	-0.0324	-0.0372	-0.0278	-0.0237	-0.0385	-0.0364	-0.0287	-0.0340	-0.0295	-0.0215	-0.0232	-0.0619	-0.0674	-0.0683	-0.0539	-0.0675	-0.0534	-0.0119	-0.0468	-0.0331
	-0.1064	-0.0890	-0.0967	-0.0783	-0.0865	-0.0493	-0.0291	-0.0540	-0.0505	-0.0506	-0.0448	-0.0422	-0.0353	-0.0646	-0.0501	-0.0527	-0.0476	-0.0494	-0.0281	-0.0250	-0.0999	-0.0901	-0.1009	-0.0771	-0.0974	-0.0738	-0.0336	-0.0617	-0.0451
	-0.1164	-0.0976	-0.1039	-0.0947	-0.0892	-0.0578	-0.0416	-0.0635	-0.0634	-0.0579	-0.0561	-0.0514	-0.0484	-0.0684	-0.0689	-0.0634	-0.0606	-0.0574	-0.0601	-0.0606	-0.1037	-0.1026	-0.1081	-0.0893	-0.1067	-0.0753	-0.0488	-0.0692	-0.0593
	-0.0179	-0.0235	-0.0196	-0.0298	-0.0389	-0.0269	-0.0492	-0.0403	-0.0419	-0.0479	-0.0478	-0.0532	-0.0477	-0.0398	-0.0372	-0.0331	-0.0366	-0.0333	0.0468	0.0497	-0.0074	-0.0180	-0.0232	-0.0313	-0.0315	-0.0408	-0.0435	-0.0483	-0.0439
	-0.1327	-0.1284	-0.1294	-0.1314	-0.1455	-0.1117	-0.1259	-0.1083	-0.1200	-0.1182	-0.1086	-0.1113	-0.1075	-0.1121	-0.1097	-0.1069	-0.1051	-0.1093	-0.0986	-0.1021	-0.1211	-0.1204	-0.1360	-0.1256	-0.1261	-0.1208	-0.1236	-0.1117	-0.1148
	-0.1415	-0.1347	-0.1443	-0.1391	-0.1570	-0.1142	-0.1256	-0.1122	-0.1268	-0.1234	-0.1053	-0.1099	-0.1038	-0.1149	-0.1131	-0.1055	-0.1062	-0.1136	-0.1351	-0.1380	-0.1385	-0.1360	-0.1478	-0.1364	-0.1287	-0.1283	-0.1281	-0.1166	-0.1113
List Maximum Diff (T_sensor- T_std) (only list if >0.1 C)	0.1609	0.1347	0.1443	0.1391	0.1570	0.1142	0.1259	0.1122	0.1268	0.1234	0.1086	0.1113	0.1075	0.1149	0.1131	0.1069	0.1062	0.1136	0.1351	0.1380	0.1385	0.1360	0.1478	0.1364	0.1447	0.1283	0.1281	0.1166	0.1148

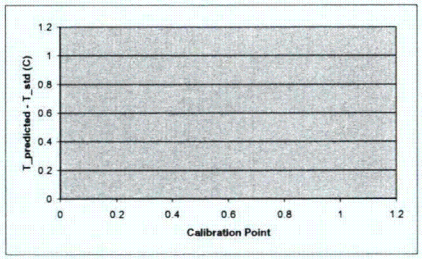
All T reading are with 0.20 C.

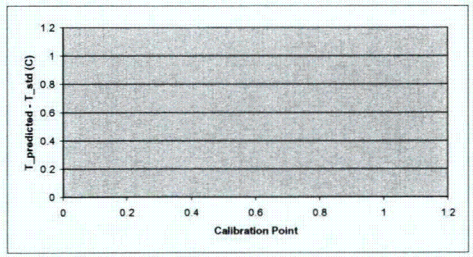
Check April 13 reading using April 26 calibration (that is use Slope + Offset from Apr 26 calibration to predict April 13 data

	Thermocouple no. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	0.0420	0.0482	0.0462	0.0467	0.0325	0.0390	0.0650	0.0456	0.0300	0.0344	0.0320	0.0399	0.0270	0.0192	0.0408	0.0450	0.0316	0.0416	0.0735	0.0812	0.0599	0.0268	0.0305	0.0526	0.0334	0.0277	0.0549	0.0369	0.0519
	-0.068	-0.054	-0.061	-0.066	-0.074	-0.076	-0.053	-0.075	-0.074	-0.066	-0.083	-0.077	-0.082	-0.070	-0.062	-0.069	-0.073	-0.056	-0.006	-0.004	-0.059	-0.068	-0.062	-0.063	-0.088	-0.075	-0.067	-0.081	-0.083
	0.0246	0.0458	0.0211	0.0370	0.0284	0.0495	0.0609	0.0323	0.0458	0.0548	0.0441	0.0436	0.0448	0.0434	0.0426	0.0415	0.0495	0.0466	0.0512	0.0629	0.0324	0.0328	0.0342	0.0403	0.0147	0.0412	0.0595	0.0414	0.0429
	-0.0470	-0.0468	-0.0670	-0.0459	-0.0595	-0.0478	-0.0294	-0.0553	-0.0340	-0.0354	-0.0525	-0.0429	-0.0457	-0.0529	-0.0524	-0.0530	-0.0477	-0.0526	-0.0615	-0.0524	-0.0459	-0.0547	-0.0632	-0.0532	-0.0601	-0.0448	-0.0350	-0.0563	-0.0501
	0.0605	0.0658	0.0608	0.0650	0.0364	0.0593	0.0744	0.0601	0.0503	0.0563	0.0575	0.0640	0.0500	0.0471	0.0576	0.0573	0.0547	0.0493	0.0786	0.0928	0.0727	0.0530	0.0457	0.0604	0.0631	0.0467	0.0525	0.0609	0.0602
	0.1446	0.1254	0.1236	0.1126	0.0868	0.0710	0.0571	0.0752	0.0638	0.0713	0.0572	0.0534	0.0514	0.0777	0.0787	0.0781	0.0882	0.0711	0.1696	0.1721	0.1415	0.1307	0.1030	0.1003	0.1214	0.0841	0.0377	0.0748	0.0645
	-0.0417	-0.0527	-0.0528	-0.0600	-0.0950	-0.0900	-0.0886	-0.0808	-0.0840	-0.0776	-0.0797	-0.0866	-0.0892	-0.0675	-0.0646	-0.0675	-0.0555	-0.0777	-0.0457	-0.0383	-0.0442	-0.0512	-0.0700	-0.0693	-0.0482	-0.0772	-0.1094	-0.0689	-0.0823
	0.0055	-0.0013	-0.0035	-0.0060	-0.0438	-0.0252	-0.0226	-0.0109	-0.0210	-0.0034	-0.0047	-0.0086	-0.0219	0.0046	0.0113	0.0042	0.0260	-0.0067	-0.0012	0.0063	0.0119	-0.0067	-0.0253	-0.0053	0.0209	-0.0131	-0.0388	0.0054	-0.0104
List Maximum Diff (T_sensor- T_std) (only list if >0.1 C)	0.1446	0.1254	0.1236	0.1126															0.1696	0.1721	0.1415	0.1307	0.1030	0.1003	0.1214		0.1094		

All T reading are with 0.25 C.







Tc 215 was not completely inside water bath

30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
18.7725	18.9221	18.5659	20.4805		20.4831	20.4672	18.0074	17.9493	17.9093	17.8896	17.0056	17.3079	17.4005	17.6436	17.7404	18.4682	18.4069	18.2922	18.5560	18.6761	18.8052	18.3146	18.3103	18.3211	19.7929	18.3577	18.3724	17.9378	17.8677	17.8519	17.0368	17.2112	20.4594
21.4465	21.6032	21.2425	23.1501		23.1519	23.1351	20.6973	20.6281	20.5963	20.5765	19.6762	19.9602	20.0759	20.3265	20.4063	21.1529	21.1099	20.9677	21.2361	21.3765	21.4784	20.9975	21.0035	21.0066	20.9288	21.0520	21.0642	20.6129	20.5597	20.5433	19.6926	19.8836	23.1274
24.2773	24.4340	24.0848	25.9463		25.9479	25.9315	23.5291	23.4661	23.4313	23.4103	22.5236	22.8043	22.9181	23.1666	23.2519	23.9936	23.9478	23.8139	24.0644	24.2116	24.3169	23.8417	23.8437	23.8521	23.0776	23.9006	23.9136	23.4559	23.3916	23.3873	22.5394	22.7148	25.9238
28.3062	28.4571	28.1104	29.9994		30.0005	29.9841	27.5701	27.5092	27.4695	27.4564	26.5764	26.8485	26.9651	27.1967	27.2894	28.0222	27.9655	27.8384	28.0915	28.2386	28.3366	27.8806	27.8685	27.8742	25.9139	27.9247	27.9376	27.4782	27.4211	27.3987	26.5900	26.7612	29.9752
31.2910	31.4492	31.0945	32.9519		32.9526	32.9370	30.5686	30.5035	30.4714	30.4579	29.5124	29.8081	29.9105	30.1591	30.2446	30.9909	30.9419	30.8039	31.0561	31.2066	31.3142	30.8411	30.8413	30.8459	28.7748	30.8899	30.9025	30.4401	30.3765	30.3708	29.5355	29.7209	32.9271
34.2862	34.4473	34.0836	35.9301		35.9306	35.9151	33.5537	33.4851	33.4479	33.4361	32.5469	32.8389	32.9433	33.1811	33.2790	34.0099	33.9682	33.8321	34.0805	34.2348	34.3368	33.8684	33.8588	33.8668	31.0232	33.9199	33.9237	33.4604	33.4006	33.3805	32.5716	32.7426	35.9032
38.5076	38.6568	38.3084	40.1127		40.1111	40.0971	37.8724	37.8088	37.7743	37.7533	36.7265	37.0126	37.1120	37.3669	37.4480	38.1898	38.1463	38.0191	38.2569	38.4245	38.5258	38.0543	38.0536	38.0498	33.8991	38.0954	38.1125	37.5656	37.4988	37.4894	36.7523	36.9322	40.0830
43.2401	43.4077	43.0433	44.8866		44.8815	44.8708	42.5341	42.4639	42.4418	42.4308	41.5288	41.8234	41.9171	42.1691	42.2523	42.9774	42.9484	42.8042	43.0492	43.2071	43.3136	42.8459	42.8327	42.8433	37.2815	42.8989	42.9034	42.4165	42.3463	42.3365	41.5551	41.7361	44.8541
48.2448	48.4118	48.0481	49.8205		49.8138	49.8044	47.5139	47.4501	47.4269	47.4006	46.5383	46.8310	46.9242	47.1730	47.2572	47.9851	47.9376	47.7866	48.0346	48.1952	48.3084	47.8505	47.8280	47.8421	40.4544	47.9009	47.8899	47.4333	47.3614	47.3521	46.5693	46.7322	49.7867
1.7069	1.5642	1.9118	-0.0859		-0.0958	-0.0730	2.4992	2.5593	2.6068	2.6235	3.5089	3.2244	3.1052	2.8658	2.7722	2.0263	2.0887	2.2022	1.9277	1.8147	1.7017	2.1963	2.1819	2.1780	-6.0878	2.1462	2.1179	2.5372	2.5912	2.6092	3.4948	3.3081	-0.0746
1.0006	1.0001	1.0004	1.0046		1.0049	1.0047	0.9984	0.9986	0.9981	0.9981	0.9988	0.9987	0.9992	0.9990	0.9992	0.9996	0.9990	0.9997	1.0004	0.9993	0.9995	0.9987	0.9994	0.9993	1.3735	0.9988	0.9994	1.0009	1.0013	1.0011	0.9985	0.9989	1.0051
-0.0098	-0.0115	-0.0150	-0.0111		-0.0121	-0.0103	-0.0215	-0.0168	-0.0177	-0.0202	-0.0052	0.0100	-0.0077	-0.0080	-0.0013	-0.0137	-0.0219	-0.0106	-0.0082	-0.0224	-0.0029	-0.0123	-0.0192	-0.0141	0.5983	-0.0190	-0.0214	-0.0081	-0.0184	-0.0193	0.0069	0.0000	-0.0118
-0.0342	-0.0302	-0.0374	-0.0293		-0.0302	-0.0299	-0.0358	-0.0418	-0.0358	-0.0383	-0.0376	-0.0411	-0.0344	-0.0278	-0.0375	-0.0301	-0.0214	-0.0358	-0.0269	-0.0239	-0.0312	-0.0329	-0.0277	-0.0304	-0.5417	-0.0281	-0.0313	-0.0304	-0.0230	-0.0250	-0.0412	-0.0305	-0.0304
-0.0018	0.0010	0.0060	-0.0203		-0.0205	-0.0205	-0.0084	-0.0078	-0.0061	-0.0098	0.0064	-0.0006	0.0055	0.0096	0.0059	0.0093	0.0138	0.0095	0.0026	0.0092	0.0059	0.0077	0.0107	0.0130	-0.3902	0.0170	0.0164	0.0152	0.0125	0.0220	0.0015	-0.0026	-0.0198
0.0294	0.0245	0.0332	0.0515		0.0520	0.0510	0.0263	0.0296	0.0245	0.0287	0.0546	0.0383	0.0494	0.0357	0.0402	0.0361	0.0277	0.0329	0.0315	0.0334	0.0235	0.0415	0.0330	0.0323	-0.4945	0.0360	0.0378	0.0413	0.0470	0.0379	0.0462	0.0393	0.0521
0.0159	0.0170	0.0185	0.0176		0.0186	0.0177	0.0201	0.0197	0.0208	0.0247	-0.0127	-0.0059	-0.0074	-0.0048	-0.0070	0.0035	0.0013	-0.0023	-0.0026	-0.0007	-0.0005	-0.0018	0.0040	0.0018	0.4350	-0.0024	0.0008	0.0060	0.0062	0.0132	-0.0125	-0.0043	0.0189
0.0128	0.0154	0.0088	0.0095		0.0113	0.0097	0.0006	-0.0030	-0.0084	-0.0027	0.0183	0.0210	0.0230	0.0141	0.0251	0.0211	0.0247	0.0250	0.0232	0.0253	0.0205	0.0216	0.0195	0.0206	0.5233	0.0237	0.0201	0.0291	0.0342	0.0263	0.0191	0.0140	0.0101
0.0366	0.0254	0.0352	0.0113		0.0122	0.0112	0.1126	0.1146	0.1098	0.1065	-0.0070	-0.0107	-0.0115	-0.0042	-0.0092	-0.0008	-0.0013	0.0109	0.0014	0.0120	0.0073	0.0023	0.0117	0.0005	0.2734	-0.0060	0.0062	-0.0619	-0.0624	-0.0603	-0.0062	-0.0011	0.0110
-0.0282	-0.0231	-0.0281	0.0072		0.0061	0.0072	-0.0330	-0.0368	-0.0315	-0.0247	-0.0102	-0.0061	-0.0101	-0.0068	-0.0087	-0.0154	-0.0037	-0.0053	-0.0043	-0.0087	-0.0074	-0.0122	-0.0121	-0.0094	0.1192	-0.0085	-0.0059	-0.0063	-0.0088	-0.0079	-0.0104	-0.0026	0.0062
							0.113	0.115	0.110	0.106															0.598								

30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
18.8246	18.9909	18.6244	20.4488		20.4767	20.5106	18.0429	17.9871	17.9466	17.9368	17.1536	17.4200	17.5055	17.7604	17.8326	18.5305	18.5271	18.3881	18.6481	18.7666	18.8762	18.4483	18.4466	18.4554	18.4621	18.4899	18.5016	18.0406	17.9811	17.9681	17.1701	17.3431	20.4657
21.3095	21.4809	21.1198	22.9293		22.9569	22.9873	20.5465	20.4805	20.4461	20.4349	19.6237	19.9086	19.9957	20.2467	20.3293	21.0284	21.0121	20.8886	21.1349	21.2646	21.3712	20.9345	20.9404	20.9458	20.9542	20.9841	20.9991	20.5318	20.4724	20.4504	19.6496	19.8264	22.9459
24.3292	24.4999	24.1403	25.9209		25.9468	25.9692	23.5693	23.5056	23.4689	23.4528	22.6236	22.9048	22.9957	23.2485	23.3322	24.0553	24.0313	23.9004	24.1524	24.2879	24.3893	23.9601	23.9529	23.9582	23.9781	24.0018	24.0185	23.5362	23.4668	23.4591	22.6467	22.8146	25.9344
28.3158	28.5029	28.1332	29.9529		29.9866	29.9928	27.5529	27.5037	27.4688	27.4456	26.6588	26.9169	26.9873	27.2846	27.3273	28.0482	28.0545	27.8828	28.1581	28.2822	28.3768	27.9709	27.9443	27.9459	27.9818	27.9831	28.0096	27.5319	27.4449	27.4547	26.6780	26.8198	29.9615
31.3551	31.5333	31.1503	32.9589		32.9872	32.9940	30.5542	30.5101	30.4728	30.4576	29.6594	29.9123	30.0304	30.2816	30.3469	31.0829	31.0511	30.9023	31.1778	31.2919	31.4026	30.9791	30.9537	30.9619	30.9874	31.0146	31.0341	30.5406	30.4754	30.4844	29.6666	29.8406	32.9635
34.3772	34.5546	34.1893	35.9363		35.9649	35.9694	33.6575	33.6063	33.5623	33.5508	32.5970	32.8859	32.9628	33.2349	33.3098	34.0475	34.0314	33.8811	34.1368	34.2921	34.3962	33.9518	33.9448	33.9374	33.9637	33.9976	34.0016	33.4695	33.4016	33.3829	32.6406	32.7951	35.9377
38.6033	38.7629	38.3995	40.1661		40.2176	40.1959	37.8704	37.8076	37.7825	37.7729	36.9063	37.1822	37.2933	37.5161	37.6284	38.3424	38.2956	38.1814	38.4163	38.5584	38.6740	38.2320	38.2276	38.2301	38.2334	38.2846	38.2974	37.7871	37.7323	37.7241	36.9306	37.1119	40.1639
43.3359	43.5049	43.1401	44.9196		44.9833	44.9433	42.5609	42.5047	42.4652	42.4523	41.6473	41.9405	42.0119	42.2688	42.3560	43.0613	43.0346	42.8944	43.1306	43.2846	43.3881	42.9529	42.9360	42.9398	42.9549	42.9947	43.0012	42.5337	42.4679	42.4443	41.6961	41.8393	44.9151
48.3593	48.5266	48.1522	49.8604		49.9269	49.8798	47.6186	47.5603	47.5272	47.5114	46.6439	46.9233	47.0171	47.2634	47.3550	48.0766	48.0359	47.8996	48.1381	48.2968	48.4077	47.9683	47.9481	47.9549	47.9611	48.0146	48.0231	47.5190	47.4694	47.4469	46.6703	46.8408	49.8531
1.7127	1.5352	1.8953	0.0140		0.0242	-0.0731	2.5012	2.5596	2.5997	2.6131	3.3737	3.1117	3.0261	2.7553	2.7020	1.9991	1.9858	2.1278	1.8496	1.7533	1.6523	2.0683	2.0629	2.0560	2.0343	2.0350	2.0114	2.4630	2.5385	2.5376	3.3657	3.1918	-0.0219
0.9982	0.9984	0.9986	1.0016		1.0001	1.0030	0.9972	0.9972	0.9970	0.9970	0.9994	0.9989	0.9988	0.9993	0.9984	0.9980	0.9991	0.9991	0.9999	0.9986	0.9984	0.9989	0.9994	0.9995	0.9997	0.9987	0.9990	1.0002	0.9998	1.0002	0.9988	0.9991	1.0025
0.0032	-0.0049	-0.0067	-0.0048		0.0033	-0.0006	-0.0060	-0.0045	-0.0071	-0.0033	0.0162	0.0128	0.0104	0.0028	0.0068	-0.0069	-0.0030	-0.0014	-0.0048	-0.0065	-0.0010	-0.0036	-0.0009	0.0027	-0.0091	0.0003	-0.0057	0.0064	0.0159	0.0086	0.0145	0.0186	-0.0051
-0.0165	-0.0189	-0.0149	-0.0204		-0.0163	-0.0165	-0.0094	-0.0183	-0.0151	-0.0126	-0.0153	-0.0014	-0.0024	-0.0127	-0.0004	-0.0140	-0.0201	-0.0033	-0.0184	-0.0120	-0.0100	-0.0201	-0.0085	-0.0080	-0.0178	-0.0088	-0.0107	-0.0021	0.0066	-0.0086	-0.0091	-0.0004	-0.0188
-0.0023	-0.0048	0.0014	-0.0239		-0.0260	-0.0255	0.0049	-0.0018	-0.0013	-0.0036	-0.0173	-0.0084	-0.0060	-0.0131	-0.0021	0.0069	-0.0036	0.0057	-0.0014	0.0071	0.0034	0.0021	0.0024	0.0030	0.0052	0.0048	0.0056	0.0027	0.0004	0.0006	-0.0157	-0.0149	-0.0227
-0.0229	-0.0084	-0.0114	0.0144		0.0143	0.0102	-0.0225	-0.0151	-0.0134	-0.0227	0.0153	-0.0007	-0.0192	0.0201	-0.0132	-0.0081	0.0162	-0.0157	0.0038	-0.0042	-0.0154	0.0085	-0.0086	-0.0112	0.0077	-0.0191	-0.0073	-0.0009	-0.0222	-0.0032	0.0106	-0.0135	0.0144
0.0109	0.0171	0.0015	0.0252		0.0152	0.0205	-0.0296	-0.0172	-0.0183	-0.0196	0.0139	-0.0085	0.0202	0.0149	0.0017	0.0207	0.0102	0.0009	0.0231	0.0013	0.0058	0.0135	-0.0008	0.0035	0.0125	0.0083	0.0141	0.0082	0.0076	0.0271	-0.0046	0.0044	0.0238
0.0275	0.0335	0.0361	0.0073		-0.0067	0.0048	0.0651	0.0701	0.0620	0.0644	-0.0504	-0.0381	-0.0510	-0.0339	-0.0400	-0.0206	-0.0120	-0.0231	-0.0183	-0.0028	-0.0053	-0.0171	-0.0114	-0.0225	-0.0122	-0.0126	-0.0214	-0.0624	-0.0668	-0.0740	-0.0342	-0.0438	0.0054
0.0459	0.0348	0.0404	0.0438		0.0465	0.0441	0.0664	0.0595	0.0696	0.0740	0.0561	0.0535	0.0743	0.0441	0.0718	0.0658	0.0485	0.0731	0.0606	0.0576	0.0658	0.0584	0.0690	0.0682	0.0562	0.0687	0.0701	0.0558	0.0629	0.0680	0.0504	0.0689	0.0422
-0.0300	-0.0308	-0.0257	0.0049		0.0127	0.0058	-0.0562	-0.0568	-0.0617	-0.0604	-0.0060	0.0067	-0.0127	-0.0066	-0.0079	-0.0246	-0.0166	-0.0183	-0.0257	-0.0228	-0.0275	-0.0259	-0.0252	-0.0243	-0.0236	-0.0275	-0.0308	0.0031	-0.0024	-0.0111	0.0100	-0.0081	0.0052

30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
-0.0489	-0.0736	-0.0651	0.0270		0.0096	-0.0442	-0.0415	-0.0423	-0.0444	-0.0503	-0.1317	-0.0992	-0.0944	-0.1139	-0.0852	-0.0691	-0.1231	-0.0973	-0.0970	-0.0968	-0.0719	-0.1371	-0.1371	-0.1315		-0.1317	-0.1348	-0.0965	-0.0975	-0.1075	-0.1188	-0.1131	-0.0114
-0.0797	-0.0969	-0.0923	0.0008		-0.0212	-0.0682	-0.0591	-0.0711	-0.0654	-0.0714	-0.1628	-0.1497	-0.1222	-0.1330	-0.1235	-0.0897	-0.1224	-0.1243	-0.1172	-0.1002	-0.1030	-0.1572	-0.1455	-0.1472		-0.1410	-0.1457	-0.1209	-0.1060	-0.1157	-0.1661	-0.1432	-0.0368
-0.0541	-0.0707	-0.0540	0.0014		-0.0249	-0.0633	-0.0351	-0.0412	-0.0388	-0.0460	-0.1173	-0.1088	-0.0835	-0.0949	-0.0823	-0.0546	-0.0870	-0.0808	-0.0893	-0.0691	-0.0689	-0.1161	-0.1068	-0.1031		-0.0961	-0.0991	-0.0776	-0.0747	-0.0713	-0.1228	-0.1147	-0.0335
-0.0325	-0.0542	-0.0341	0.0610		0.0282	0.0015	-0.0054	-0.0096	-0.0126	-0.0119	-0.0671	-0.0690	-0.0414	-0.0677	-0.0511	-0.0340	-0.0727	-0.0601	-0.0628	-0.0477	-0.0554	-0.0816	-0.0843	-0.0828		-0.0774	-0.0792	-0.0546	-0.0461	-0.0591	-0.0773	-0.0721	0.0281
-0.0531	-0.0669	-0.0542	0.0182		-0.0194	-0.0367	-0.0152	-0.0238	-0.0197	-0.0192	-0.1329	-0.1126	-0.0996	-0.1075	-0.1005	-0.0711	-0.0989	-0.0974	-0.0985	-0.0839	-0.0825	-0.1243	-0.1131	-0.1125		-0.1161	-0.1173	-0.0923	-0.0913	-0.0868	-0.1355	-0.1151	-0.0126
-0.0634	-0.0737	-0.0693	0.0011		-0.0410	-0.0496	-0.0384	-0.0508	-0.0521	-0.0499	-0.1004	-0.0850	-0.0704	-0.0877	-0.0708	-0.0581	-0.0752	-0.0720	-0.0746	-0.0599	-0.0647	-0.1004	-0.0974	-0.0930		-0.0902	-0.0992	-0.0715	-0.0678	-0.0783	-0.1031	-0.0963	-0.0291
-0.0496	-0.0711	-0.0505	-0.0097		-0.0601	-0.0550	0.0683	0.0607	0.0614	0.0545	-0.1235	-0.1159	-0.1068	-0.1049	-0.1083	-0.0865	-0.1007	-0.0890	-0.0987	-0.0761	-0.0822	-0.1191	-0.1049	-0.1120		-0.1203	-0.1146	-0.1658	-0.1705	-0.1667	-0.1278	-0.1106	-0.0389
-0.1257	-0.1279	-0.1224	-0.0282		-0.0890	-0.0668	-0.0829	-0.0975	-0.0850	-0.0818	-0.1243	-0.1103	-0.1074	-0.1062	-0.1114	-0.1084	-0.1028	-0.1084	-0.1071	-0.1002	-0.1018	-0.1327	-0.1285	-0.1207		-0.1231	-0.1285	-0.1140	-0.1240	-0.1188	-0.1308	-0.1111	-0.0559
-0.1301	-0.1320	-0.1246	-0.0864		-0.1562	-0.1183	-0.1170	-0.1255	-0.1148	-0.1268	-0.1181	-0.1081	-0.1064	-0.1059	-0.1143	-0.1105	-0.1178	-0.1307	-0.1224	-0.1192	-0.1149	-0.1336	-0.1360	-0.1243		-0.1277	-0.1470	-0.0966	-0.1099	-0.1024	-0.1228	-0.1198	-0.1110
0.1301	0.1320	0.1246			0.1562	0.1183	0.1170	0.1255	0.1148	0.1268	0.1628	0.1497	0.1222	0.1330	0.1235	0.1105	0.1231	0.1307	0.1224	0.1192	0.1149	0.1572	0.1455	0.1472		0.1410	0.1470	0.1658	0.1705	0.1667	0.1661	0.1432	0.1110

30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
0.0276	0.0245	0.0486	0.0539		0.0371	0.0080	0.0750	0.0804	0.0801	0.0817	0.0854	0.1032	0.1351	0.0756	0.0960	0.0915	0.0736	0.0745	0.0826	0.0759	0.0821	0.0783	0.0714	0.0513	0.0901	0.0785	0.0778	0.1129	0.1336	0.1247	0.0791	0.0818	0.0175
-0.075	-0.085	-0.058	-0.075		-0.095	-0.117	0.004	-0.002	-0.007	-0.001	-0.033	-0.031	-0.023	-0.043	-0.009	-0.038	-0.076	-0.038	-0.246	-0.047	-0.056	-0.052	-0.047	-0.071	-0.048	-0.039	-0.034	-0.010	-0.005	-0.010	-0.032	-0.031	-0.109
0.0413	0.0422	0.0579	0.0261		0.0018	-0.0144	0.0815	0.0614	0.0588	0.0649	0.1006	0.1023	0.1076	0.0907	0.1209	0.0922	0.0585	0.0756	0.0833	0.0819	0.0728	0.0783	0.0799	0.0674	0.0735	0.0765	0.0910	0.1110	0.1213	0.1129	0.0890	0.0990	-0.0059
-0.0498	-0.0536	-0.0419	-0.0396		-0.0707	-0.0718	-0.0324	-0.0435	-0.0457	-0.0421	0.0299	0.0167	0.0261	0.0129	0.0354	0.0065	-0.0314	-0.0058	0.0826	-0.0179	-0.0175	-0.0037	-0.0099	-0.0229	-0.0154	-0.0034	0.0076	0.0246	0.0338	0.0283	0.0264	0.0221	-0.0694
0.0365	0.0452	0.0545	0.0275		-0.0085	0.0021	0.1016	0.0977	0.0974	0.0949	0.1019	0.1101	0.1283	0.0877	0.1066	0.0897	0.0795	0.0822	0.0977	0.0839	0.0862	0.0901	0.0804	0.0682	0.0864	0.0853	0.0943	0.1183	0.1345	0.1274	0.0927	0.0947	0.0022
0.0453	0.0419	0.0836	0.0391		-0.0041	0.0152	0.1840	0.1731	0.1820	0.1785	0.0886	0.0888	0.0954	0.0761	0.0934	0.0778	0.0794	0.0816	0.1252	0.0837	0.0781	0.0988	0.0965	0.0786	0.0932	0.0923	0.1080	0.0506	0.0574	0.0507	0.0942	0.0992	0.0138
-0.1072	-0.0926	-0.0623	-0.0788		-0.1264	-0.1024	-0.0270	-0.0300	-0.0310	-0.0361	0.0019	-0.0030	0.0103	-0.0119	0.0034	-0.0241	-0.0209	-0.0150	0.0635	-0.0187	-0.0348	0.0062	-0.0028	-0.0183	-0.0136	-0.0050	0.0015	0.0024	0.0053	-0.0085	-0.0029	0.0014	-0.0997
-0.0372	-0.0267	0.0144	-0.0591		-0.1140	-0.0767	0.0139	0.0076	0.0120	0.0084	0.0865	0.0844	0.0950	0.0675	0.0811	0.0531	0.0560	0.0584	0.1213	0.0555	0.0421	0.0771	0.0701	0.0573	0.0598	0.0677	0.0759	0.0882	0.0988	0.0910	0.0772	0.0801	-0.0779
0.1072					0.1264	0.1173	0.1840	0.1731	0.1820	0.1785	0.1019	0.1101	0.1351		0.1209				0.2462								0.1080	0.1183	0.1345	0.1274			0.1092

Tc 236 was broken

64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
20.5214	20.4275	20.4745	20.4785	20.4535	20.4791	18.7823	18.2080	18.3174	20.5319	20.5051	20.5952		17.9474	17.9145	20.4360	20.5108	20.4739	19.0379	19.2401	19.3390	19.9699	19.9264	19.9308	20.0551	20.1558	20.2180	20.3326	19.7042	19.6325	19.4753	19.4803	19.4846	19.3608
23.1928	23.0941	23.1455	23.1485	23.1208	23.1496	21.4808	20.8863	21.0077	23.2034	23.1759	23.2690		20.6249	20.6067	23.1057	23.1826	23.1439	21.7441	21.9469	22.0355	22.6625	22.6259	22.6132	22.7357	22.8561	22.9092	23.0211	22.3902	22.3112	22.1498	22.1609	22.1725	22.0287
25.9874	25.8911	25.9431	25.9445	25.9164	25.9464	24.3221	23.7262	23.8509	25.9976	25.9714	26.0604		23.4571	23.4362	25.9051	25.9788	25.9406	24.5240	24.7282	24.8138	25.4291	25.3894	25.3859	25.5060	25.6113	25.6655	25.7759	25.1574	25.0918	24.9291	24.9405	24.9489	24.8057
30.0422	29.9418	29.9981	29.9987	29.9672	30.0016	28.3426	27.7427	27.8698	30.0528	30.0264	30.1168		27.4801	27.4620	29.9604	30.0345	29.9948	28.5672	28.7800	28.8611	29.4879	29.4315	29.4416	29.5554	29.6644	29.7210	29.8169	29.2111	29.1394	28.9800	28.9847	29.0014	28.8465
32.9938	32.8931	32.9514	32.9509	32.9179	32.9546	31.3072	30.7167	30.8306	33.0049	32.9784	33.0676		30.4477	30.4128	32.9144	32.9874	32.9471	31.4496	31.6596	31.7638	32.3998	32.3671	32.3590	32.4916	32.6124	32.6641	32.7807	32.1404	32.0814	31.9222	31.9338	31.9436	31.7414
35.9735	35.8672	35.9302	35.9285	35.8922	35.9329	34.3355	33.7341	33.8586	35.9850	35.9572	36.0491		33.4599	33.4328	35.8923	35.9675	35.9248	34.5601	34.7686	34.8605	35.4835	35.4307	35.4213	35.5589	35.6521	35.7126	35.8162	35.1809	35.1214	34.9569	34.9654	34.9706	34.7887
40.1588	40.0433	40.1144	40.1118	40.0696	40.1176	38.5170	37.9229	38.0376	40.1718	40.1434	40.2403		37.5654	37.5322	40.0750	40.1530	40.1076	38.7445	38.9395	39.0347	39.6418	39.5845	39.5756	39.7034	39.8087	39.8540	39.9570	39.3463	39.2803	39.1288	39.1289	39.1422	38.9379
44.9324	44.8140	44.8892	44.8858	44.8401	44.8927	43.3058	42.7109	42.8224	44.9456	44.9188	45.0139		42.4166	42.3695	44.8510	44.9263	44.8809	43.4815	43.6625	43.7778	44.3836	44.3461	44.3342	44.4699	44.5792	44.6115	44.7292	44.1044	44.0561	43.8826	43.9035	43.9092	43.7077
49.8673	49.7469	49.8261	49.8216	49.7715	49.8289	48.2950	47.7041	47.8153	49.8806	49.8552	49.9492		47.4356	47.3776	49.7883	49.8626	49.8161	48.5129	48.6823	48.7993	49.3851	49.3301	49.3270	49.4502	49.5634	49.5839	49.6960	49.0929	49.0441	48.8781	48.8928	48.8994	48.7137
-0.1227	-0.0495	-0.0729	-0.0823	-0.0761	-0.0778	1.7013	2.2862	2.1609	-0.1303	-0.1028	-0.1893		2.5241	2.5228	-0.0339	-0.1088	-0.0790	1.4374	1.2033	1.1346	0.4740	0.5076	0.5045	0.3880	0.2800	0.1919	0.0828	0.7250	0.8182	0.9717	0.9699	0.9588	1.0491
1.0044	1.0054	1.0042	1.0045	1.0054	1.0043	0.9997	0.9999	1.0001	1.0043	1.0043	1.0041		1.0012	1.0023	1.0042	1.0042	1.0046	1.0012	1.0023	1.0014	1.0026	1.0030	1.0033	1.0029	1.0029	1.0041	1.0041	1.0035	1.0026	1.0029	1.0027	1.0027	1.0052
-0.0111	-0.0123	-0.0118	-0.0112	-0.0122	-0.0112	-0.0229	-0.0076	-0.0191	-0.0106	-0.0104	-0.0100		-0.0063	-0.0211	-0.0117	-0.0118	-0.0118	-0.0023	-0.0130	0.0002	-0.0032	-0.0060	0.0001	0.0021	-0.0054	-0.0073	-0.0018	-0.0011	0.0024	0.0034	0.0018	-0.0037	0.0109
-0.0280	-0.0313	-0.0295	-0.0291	-0.0305	-0.0292	-0.0254	-0.0296	-0.0283	-0.0277	-0.0281	-0.0253		-0.0254	-0.0227	-0.0308	-0.0287	-0.0296	0.0071	-0.0001	0.0004	-0.0035	0.0018	-0.0087	-0.0093	0.0027	-0.0051	-0.0024	-0.0057	-0.0119	-0.0144	-0.0104	-0.0085	-0.0074
-0.0210	-0.0193	-0.0200	-0.0204	-0.0197	-0.0205	0.0150	0.0101	0.0153	-0.0215	-0.0208	-0.0225		0.0103	0.0133	-0.0196	-0.0209	-0.0202	-0.0098	-0.0125	-0.0175	-0.0296	-0.0264	-0.0270	-0.0309	-0.0340	-0.0374	-0.0363	-0.0287	-0.0240	-0.0270	-0.0235	-0.0246	-0.0159
0.0516	0.0532	0.0521	0.0521	0.0529	0.0521	0.0341	0.0262	0.0347	0.0510	0.0515	0.0504		0.0383	0.0485	0.0528	0.0519	0.0525	0.0382	0.0485	0.0354	0.0399	0.0278	0.0419	0.0304	0.0309	0.0347	0.0211	0.0393	0.0342	0.0356	0.0314	0.0388	0.0460
0.0161	0.0203	0.0179	0.0177	0.0195	0.0177	-0.0024	-0.0001	-0.0040	0.0158	0.0162	0.0132		0.0096	0.0061	0.0193	0.0172	0.0181	-0.0760	-0.0654	-0.0580	-0.0405	-0.0277	-0.0312	-0.0247	-0.0125	-0.0101	-0.0031	-0.0210	-0.0160	-0.0137	-0.0117	-0.0110	-0.0441
0.0089	0.0104	0.0094	0.0087	0.0099	0.0088	0.0249	0.0170	0.0245	0.0086	0.0076	0.0069		0.0255	0.0331	0.0097	0.0098	0.0095	0.0381	0.0507	0.0430	0.0514	0.0452	0.0410	0.0516	0.0361	0.0508	0.0448	0.0303	0.0320	0.0298	0.0279	0.0242	0.0192
0.0126	0.0090	0.0113	0.0110	0.0098	0.0113	0.0050	0.0054	0.0041	0.0133	0.0117	0.0152		-0.0639	-0.0580	0.0100	0.0129	0.0113	0.0274	0.0310	0.0230	0.0207	0.0115	0.0089	0.0083	0.0048	0.0092	0.0025	0.0103	0.0019	0.0137	0.0025	0.0071	-0.0101
0.0072	0.0053	0.0063	0.0065	0.0061	0.0069	-0.0079	-0.0070	-0.0104	0.0075	0.0074	0.0084		-0.0066	-0.0094	0.0061	0.0063	0.0063	-0.0300	-0.0352	-0.0274	-0.0249	-0.0126	-0.0170	-0.0112	-0.0107	-0.0138	-0.0059	-0.0148	-0.0098	-0.0187	-0.0103	-0.0130	-0.0154

64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
20.5234	20.3994	20.4391	20.4566	20.4738	20.4493	18.8719	18.3321	18.4510	20.5126	20.4840	20.5656	18.5399	18.0468	18.0224	20.4628	20.4928	20.5601	19.0826	19.2890	19.3801	19.9569	19.9499	19.9581	20.0501	20.1588	20.2221	20.3124	19.7296	19.6624	19.4931	19.5110	19.5169	19.3761
23.0075	22.8755	22.9201	22.9367	22.9534	22.9299	21.3691	20.8264	20.9394	22.9964	22.9651	23.0510	21.0336	20.5319	20.5141	22.9441	22.9753	23.0439	21.5513	21.7586	21.8399	22.4544	22.4436	22.4400	22.5524	22.6559	22.7241	22.8272	22.2245	22.1589	21.9914	21.9981	22.0186	21.8594
26.0008	25.8669	25.9132	25.9271	25.9423	25.9212	24.3861	23.8326	23.9574	25.9861	25.9564	26.0366	24.0433	23.5419	23.5084	25.9381	25.9667	26.0322	24.5296	24.7447	24.8369	25.4218	25.4313	25.4142	25.5243	25.6453	25.6906	25.8023	25.2163	25.1349	24.9780	24.9885	24.9923	24.8349
30.0434	29.8890	29.9420	29.9566	29.9688	29.9510	28.3806	27.8258	27.9569	30.0196	29.9921	30.0702	28.0497	27.5299	27.5004	29.9775	30.0004	30.0693	28.4808	28.7312	28.7943	29.4251	29.4278	29.3911	29.5419	29.6432	29.6854	29.8160	29.1949	29.1252	28.9785	28.9759	28.9944	28.8295
33.0523	32.8938	32.9502	32.9643	32.9706	32.9593	31.3943	30.8437	30.9583	33.0261	33.0008	33.0765	31.0543	30.5404	30.5384	32.9869	33.0081	33.0722	31.5303	31.7421	31.8186	32.4608	32.4218	32.4084	32.5596	32.6339	32.7039	32.8161	32.1879	32.1394	31.9711	31.9852	32.0074	31.8376
36.0314	35.8659	35.9271	35.9407	35.9449	35.9368	34.4003	33.8132	33.9453	36.0060	35.9791	36.0581	34.0442	33.4755	33.4367	35.9630	35.9871	36.0479	34.5337	34.7683	34.8583	35.4440	35.4429	35.4055	35.5461	35.6546	35.6848	35.8052	35.2015	35.1226	34.9735	34.9781	34.9846	34.8209
40.2604	40.0912	40.1609	40.1710	40.1691	40.1698	38.6690	38.1068	38.2224	40.2398	40.2113	40.2980	38.3219	37.7925	37.7789	40.1908	40.2215	40.2739	38.7811	38.9874	39.0948	39.6908	39.6618	39.6524	39.7973	39.8703	39.9378	40.0351	39.4308	39.3804	39.2159	39.2388	39.2482	39.0513
45.0014	44.8409	44.9161	44.9218	44.9152	44.9239	43.3880	42.8086	42.9377	44.9893	44.9602	45.0502	43.0429	42.5394	42.4914	44.9391	44.9729	45.0203	43.4838	43.7049	43.7958	44.3860	44.3913	44.3606	44.5020	44.6120	44.6444	44.7694	44.1633	44.0893	43.9398	43.9516	43.9583	43.8019
49.9390	49.7791	49.8599	49.8626	49.8574	49.8657	48.4037	47.8307	47.9467	49.9316	49.8999	49.9909	48.0456	47.5264	47.5067	49.8830	49.9141	49.9659	48.5490	48.7340	48.8594	49.4264	49.3942	49.3970	49.5209	49.5964	49.6631	49.7571	49.1602	49.1061	48.9298	48.9654	48.9661	48.7754
-0.0642	0.0415	0.0309	0.0028	-0.0347	0.0187	1.6546	2.1735	2.0538	-0.0459	-0.0178	-0.0903	1.9735	2.4636	2.4832	0.0018	-0.0230	-0.1088	1.4400	1.2095	1.1540	0.5311	0.5216	0.5271	0.4348	0.3063	0.2449	0.1391	0.7329	0.8112	0.9717	0.9778	0.9570	1.0846
1.0014	1.0027	1.0013	1.0018	1.0027	1.0014	0.9984	0.9997	0.9997	1.0013	1.0014	1.0010	0.9992	1.0000	1.0002	1.0013	1.0012	1.0020	1.0008	1.0012	1.0001	1.0009	1.0015	1.0018	1.0006	1.0016	1.0018	1.0017	1.0020	1.0016	1.0016	1.0010	1.0014	1.0026
-0.0125	-0.0035	-0.0035	-0.0043	-0.0058	-0.0033	-0.0031	0.0003	-0.0016	-0.0058	-0.0060	-0.0034	-0.0020	0.0106	0.0091	-0.0085	-0.0054	-0.0086	0.0369	0.0219	0.0365	0.0050	0.0009	0.0206	-0.0023	-0.0032	0.0032	-0.0143	0.0021	0.0055	-0.0032	0.0091	0.0005	0.0104
-0.0250	-0.0206	-0.0193	-0.0198	-0.0194	-0.0192	-0.0098	-0.0060	-0.0141	-0.0188	-0.0216	-0.0154	-0.0103	-0.0043	0.0012	-0.0240	-0.0199	-0.0199	0.0074	-0.0056	-0.0034	0.0046	-0.0017	0.0069	0.0017	-0.0021	0.0097	0.0046	0.0020	0.0060	-0.0007	-0.0011	0.0055	0.0000
-0.0277	-0.0211	-0.0223	-0.0242	-0.0225	-0.0238	0.0024	-0.0007	0.0029	-0.0251	-0.0262	-0.0267	-0.0031	0.0058	-0.0039	-0.0261	-0.0248	-0.0258	-0.0120	-0.0158	-0.0060	-0.0255	-0.0096	-0.0137	-0.0245	-0.0080	-0.0185	-0.0152	-0.0003	-0.0131	-0.0093	-0.0076	-0.0167	-0.0169
0.0205	0.0120	0.0118	0.0125	0.0148	0.0117	-0.0094	-0.0087	0.0010	0.0138	0.0150	0.0111	0.0000	-0.0062	-0.0112	0.0187	0.0138	0.0192	-0.0578	-0.0245	-0.0481	-0.0188	-0.0071	-0.0297	-0.0044	-0.0038	-0.0164	0.0052	-0.0136	-0.0164	-0.0022	-0.0160	-0.0092	-0.0120
0.0336	0.0250	0.0239	0.0256	0.0247	0.0242	-0.0005	0.0084	0.0013	0.0243	0.0277	0.0205	0.0020	0.0043	0.0274	0.0320	0.0252	0.0279	-0.0061	-0.0099	-0.0235	0.0195	-0.0087	-0.0070	0.0153	-0.0085	0.0075	0.0103	-0.0146	0.0027	-0.0047	-0.0037	0.0079	0.0038
0.0168	0.0052	0.0047	0.0072	0.0070	0.0059	0.0009	-0.0230	-0.0127	0.0082	0.0101	0.0052	-0.0105	-0.0605	-0.0737	0.0121	0.0078	0.0095	-0.0004	0.0199	0.0165	0.0053	0.0169	-0.0047	0.0037	0.0170	-0.0063	0.0044	0.0050	-0.0092	0.0026	-0.0077	-0.0109	-0.0052
0.0516	0.0420	0.0439	0.0450	0.0426	0.0448	0.0629	0.0693	0.0629	0.0476	0.0480	0.0495	0.0637	0.0565	0.0694	0.0454	0.0473	0.0437	0.0502	0.0442	0.0535	0.0556	0.0420	0.0498	0.0576	0.0393	0.0543	0.0415	0.0428	0.0554	0.0520	0.0575	0.0585	0.0360
-0.0008	0.0047	0.0053	0.0042	0.0015	0.0055	-0.0256	-0.0301	-0.0235	0.0035	0.0033	0.0066	-0.0192	0.0034	-0.0173	0.0000	0.0045	-0.0007	-0.0436	-0.0327	-0.0448	-0.0451	-0.0215	-0.0338	-0.0346	-0.0115	-0.0306	-0.0163	-0.0152	-0.0280	-0.0163	-0.0248	-0.0251	-0.0013

64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
-0.0145	0.0247	0.0320	0.0176	-0.0261	0.0265	-0.0926	-0.1237	-0.1352	0.0134	0.0150	0.0263		-0.0888	-0.0988	-0.0354	0.0126	-0.0949	-0.0078	-0.0271	-0.0046	0.0180	-0.0226	-0.0068	0.0027	-0.0061	-0.0008	0.0059	-0.0233	-0.0244	-0.0210	-0.0216	-0.0319	-0.0049
-0.0395	-0.0014	0.0064	-0.0077	-0.0516	0.0008	-0.0984	-0.1462	-0.1458	-0.0115	-0.0105	0.0028		-0.1113	-0.1061	-0.0621	-0.0122	-0.1197	0.0004	-0.0170	-0.0078	0.0128	-0.0190	-0.0196	-0.0149	-0.0017	-0.0048	-0.0011	-0.0320	-0.0414	-0.0421	-0.0382	-0.0403	-0.0302
-0.0410	0.0032	0.0077	-0.0067	-0.0484	0.0014	-0.0815	-0.1071	-0.1036	-0.0135	-0.0112	-0.0028		-0.0790	-0.0761	-0.0590	-0.0127	-0.1175	-0.0176	-0.0323	-0.0292	-0.0182	-0.0514	-0.0420	-0.0428	-0.0421	-0.0436	-0.0417	-0.0593	-0.0563	-0.0582	-0.0557	-0.0602	-0.0461
0.0194	0.0650	0.0679	0.0547	0.0132	0.0623	-0.0473	-0.0917	-0.0861	0.0470	0.0492	0.0578		-0.0560	-0.0495	0.0016	0.0480	-0.0554	0.0286	0.0244	0.0187	0.0441	-0.0034	0.0209	0.0092	0.0174	0.0192	0.0061	0.0028	-0.0022	-0.0007	-0.0073	-0.0022	0.0051
-0.0250	0.0243	0.0251	0.0121	-0.0281	0.0194	-0.0874	-0.1186	-0.1263	0.0031	0.0053	0.0116		-0.0884	-0.0982	-0.0405	0.0044	-0.0974	-0.0868	-0.0926	-0.0784	-0.0416	-0.0634	-0.0566	-0.0527	-0.0300	-0.0324	-0.0251	-0.0622	-0.0554	-0.0537	-0.0551	-0.0560	-0.0927
-0.0412	0.0065	0.0078	-0.0050	-0.0458	0.0020	-0.0639	-0.1020	-0.0994	-0.0128	-0.0118	-0.0038		-0.0761	-0.0776	-0.0587	-0.0119	-0.1139	0.0260	0.0202	0.0187	0.0448	0.0047	0.0111	0.0165	0.0145	0.0215	0.0155	-0.0156	-0.0104	-0.0139	-0.0204	-0.0249	-0.0375
-0.0502	-0.0060	-0.0026	-0.0143	-0.0572	-0.0075	-0.0889	-0.1145	-0.1218	-0.0204	-0.0199	-0.0083		-0.1706	-0.1774	-0.0705	-0.0213	-0.1230	0.0135	-0.0038	-0.0065	0.0066	-0.0354	-0.0272	-0.0363	-0.0224	-0.0296	-0.0368	-0.0419	-0.0448	-0.0353	-0.0524	-0.0477	-0.0777
-0.0700	-0.0223	-0.0216	-0.0319	-0.0739	-0.0257	-0.1076	-0.1278	-0.1387	-0.0403	-0.0381	-0.0296		-0.1193	-0.1392	-0.0882	-0.0422	-0.1403	-0.0459	-0.0751	-0.0629	-0.0475	-0.0668	-0.0601	-0.0667	-0.0443	-0.0636	-0.0566	-0.0742	-0.0613	-0.0736	-0.0729	-0.0742	-0.0957
-0.1283	-0.0760	-0.0783	-0.0873	-0.1291	-0.0825	-0.1263	-0.1360	-0.1476	-0.0987	-0.0950	-0.0893		-0.1003	-0.1301	-0.1444	-0.0999	-0.1955	-0.0107	-0.0492	-0.0407	-0.0418	-0.0754	-0.0585	-0.0833	-0.0523	-0.0823	-0.0814	-0.0756	-0.0651	-0.0699	-0.0784	-0.0772	-0.0769
0.1283				0.1291		0.1263	0.1462	0.1476					0.1706	0.1774	0.1444		0.1955																

64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
0.0132	0.0550	0.0589	0.0469	0.0468	0.0535	0.0840	0.0801	0.0701	0.0431	0.0428	0.0571	0.1018	0.1267	0.1114	0.0567	0.0406	0.0558	0.0772	0.0695	0.0815	0.0414	0.0121	0.0524	0.0341	0.0154	0.0119	0.0137	0.0287	0.0211	0.0018	0.0205	0.0245	0.0472
-0.117	-0.071	-0.070	-0.082	-0.079	-0.076	-0.052	-0.039	-0.046	-0.088	-0.088	-0.077	-0.035	-0.013	-0.001	-0.069	-0.090	-0.071	0.010	-0.037	-0.020	-0.036	-0.092	-0.086	-0.098	-0.092	-0.100	-0.122	-0.106	-0.098	-0.112	-0.103	-0.102	-0.076
-0.0132	0.0331	0.0345	0.0225	0.0266	0.0285	0.0800	0.0845	0.0875	0.0161	0.0170	0.0291	0.0978	0.1159	0.1162	0.0292	0.0159	0.0297	0.1475	0.0964	0.1079	0.0754	0.0289	0.0361	0.0113	0.0160	0.0078	-0.0185	0.0073	0.0065	0.0008	0.0027	0.0109	0.0332
-0.0815	-0.0308	-0.0319	-0.0456	-0.0352	-0.0392	-0.0088	0.0031	-0.0012	-0.0518	-0.0528	-0.0444	0.0109	0.0277	0.0359	-0.0416	-0.0530	-0.0410	-0.0150	-0.0548	-0.0447	-0.0433	-0.0757	-0.0739	-0.0854	-0.0786	-0.0880	-0.0977	-0.0862	-0.0836	-0.0951	-0.0927	-0.0800	-0.0640
-0.0073	0.0410	0.0412	0.0275	0.0380	0.0335	0.0868	0.0897	0.0848	0.0219	0.0206	0.0329	0.1100	0.1228	0.1185	0.0295	0.0217	0.0295	-0.0010	-0.0118	0.0009	0.0042	0.0001	0.0186	0.0190	0.0132	-0.0114	0.0127	0.0278	0.0215	0.0097	0.0196	0.0338	-0.0095
0.0049	0.0546	0.0548	0.0402	0.0409	0.0461	0.0851	0.1066	0.1004	0.0336	0.0332	0.0444	0.1186	0.0395	0.0511	0.0318	0.0343	0.0284	0.0359	-0.0208	0.0276	0.0332	0.0321	0.0409	0.0334	0.0405	0.0266	0.0249	0.0444	0.0505	0.0394	0.0433	0.0555	0.0081
-0.1116	-0.0568	-0.0583	-0.0734	-0.0754	-0.0683	-0.0184	0.0047	0.0014	-0.0860	-0.0815	-0.0738	0.0173	-0.0076	-0.0048	-0.0884	-0.0807	-0.0972	0.0037	-0.0267	-0.0420	-0.0488	-0.0659	-0.0580	-0.0748	-0.0802	-0.0878	-0.0965	-0.0867	-0.0759	-0.0864	-0.0899	-0.0722	-0.1165
-0.0913	-0.0353	-0.0365	-0.0502	-0.0570	-0.0472	0.0578	0.0728	0.0773	-0.0644	-0.0604	-0.0534	0.0909	0.0821	0.0869	-0.0698	-0.0590	-0.0817	0.0378	0.0170	0.0126	0.0196	0.0106	0.0238	0.0114	0.0203	0.0068	-0.0063	0.0268	0.0351	0.0263	0.0211	0.0454	0.0231
0.1174							0.1066	0.1004					0.1267	0.1185				0.1475		0.1079							0.1225	0.1064		0.1123	0.1028	0.1024	0.1165

98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119
19.2486	19.2548	18.8833	19.0682	19.2025	19.2705	19.6448	20.4996	20.5505	20.4618	20.1254	20.1842	20.2668	20.2795	19.6581	19.5662	19.5018	19.4687	19.4890	19.2728	19.2394	19.2483
21.9149	21.9279	21.5901	21.7710	21.9231	21.9701	22.3391	23.1667	23.2234	23.1310	22.8102	22.8708	22.9665	22.9668	22.3392	22.2484	22.1911	22.1472	22.1712	21.9489	21.9059	21.9169
24.6928	24.7105	24.3820	24.5528	24.6949	24.7566	25.1058	25.9587	26.0171	25.9281	25.5859	25.6328	25.7178	25.7325	25.1085	25.0156	24.9709	24.9302	24.9453	24.7213	24.6864	24.6858
28.7275	28.7542	28.4295	28.6169	28.7462	28.8149	29.1559	30.0078	30.0733	29.9821	29.6344	29.6879	29.7549	29.7925	29.1509	29.0734	29.0201	28.9826	28.9924	28.7616	28.7351	28.7191
31.6280	31.6456	31.3148	31.4899	31.6393	31.6971	32.0599	32.9569	33.0255	32.9349	32.5895	32.6262	32.7198	32.7412	32.0943	32.0084	31.9669	31.9207	31.9366	31.6616	31.6223	31.6263
34.6612	34.6869	34.4218	34.6053	34.7409	34.8078	35.1545	35.9309	36.0064	35.9116	35.6367	35.6801	35.7558	35.7885	35.1258	35.0401	35.0091	34.9530	34.9669	34.6991	34.6664	34.6574
38.8199	38.8451	38.6114	38.7869	38.9119	38.9865	39.3084	40.1070	40.1943	40.0938	39.7946	39.8249	39.8978	39.9342	39.2809	39.2036	39.1738	39.1268	39.1345	38.8579	38.8267	38.8143
43.5907	43.6179	43.3526	43.5075	43.6507	43.7090	44.0484	44.8725	44.9674	44.8681	44.5609	44.5881	44.6733	44.6940	44.0496	43.9615	43.9409	43.9005	43.9061	43.6287	43.5925	43.5870
48.5847	48.6148	48.3961	48.5392	48.6821	48.7405	49.0537	49.8002	49.9029	49.8028	49.5544	49.5714	49.6318	49.6658	49.0297	48.9516	48.9320	48.8850	48.8922	48.6378	48.5969	48.5931
1.1535	1.1546	1.6115	1.4010	1.2589	1.1987	0.7939	-0.1345	-0.1470	-0.0671	0.3346	0.2450	0.1431	0.1470	0.7633	0.8620	0.9531	0.9864	0.9554	1.1407	1.1743	1.1606
1.0057	1.0050	1.0001	1.0012	1.0013	1.0012	1.0030	1.0060	1.0042	1.0046	1.0020	1.0034	1.0041	1.0033	1.0040	1.0036	1.0021	1.0024	1.0029	1.0049	1.0050	1.0055
0.0109	0.0050	-0.0042	-0.0077	-0.0137	-0.0072	-0.0025	-0.0126	-0.0112	-0.0115	-0.0001	-0.0018	-0.0076	-0.0074	0.0007	-0.0006	-0.0044	0.0019	0.0018	0.0088	0.0100	0.0149
-0.0077	-0.0085	0.0027	-0.0016	0.0103	-0.0043	-0.0003	-0.0295	-0.0272	-0.0301	-0.0099	-0.0060	0.0031	-0.0114	-0.0074	-0.0087	-0.0095	-0.0132	-0.0080	-0.0019	-0.0102	-0.0019
-0.0141	-0.0121	-0.0052	-0.0164	-0.0142	-0.0143	-0.0252	-0.0209	-0.0218	-0.0201	-0.0286	-0.0345	-0.0344	-0.0367	-0.0269	-0.0314	-0.0238	-0.0235	-0.0259	-0.0159	-0.0158	-0.0177
0.0435	0.0516	0.0425	0.0526	0.0424	0.0489	0.0370	0.0524	0.0512	0.0524	0.0278	0.0345	0.0192	0.0365	0.0318	0.0411	0.0338	0.0387	0.0332	0.0444	0.0531	0.0378
-0.0397	-0.0426	-0.0721	-0.0708	-0.0609	-0.0653	-0.0503	0.0191	0.0156	0.0188	-0.0111	-0.0172	-0.0039	-0.0052	-0.0130	-0.0132	-0.0132	-0.0162	-0.0140	-0.0413	-0.0452	-0.0391
0.0107	0.0138	0.0350	0.0483	0.0448	0.0491	0.0535	0.0109	0.0089	0.0092	0.0421	0.0471	0.0446	0.0521	0.0308	0.0295	0.0353	0.0234	0.0253	0.0113	0.0140	0.0087
-0.0071	-0.0073	0.0249	0.0350	0.0212	0.0330	0.0198	0.0119	0.0142	0.0105	0.0082	0.0061	0.0034	0.0112	0.0027	0.0082	0.0088	0.0072	0.0052	-0.0094	-0.0048	-0.0115
-0.0093	-0.0108	-0.0336	-0.0386	-0.0339	-0.0387	-0.0261	0.0058	0.0072	0.0067	-0.0160	-0.0143	-0.0016	-0.0135	-0.0094	-0.0166	-0.0142	-0.0075	-0.0092	-0.0149	-0.0152	-0.0125

Std deviation for row
0.057
0.050
0.038
0.050
0.047
0.049
0.042
0.018

0.5983 Max Diff
0.0494 std dev all data

98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119
19.2684	19.2827	18.9479	19.1223	19.2558	19.3109	19.6670	20.4879	20.5669	20.4546	20.1397	20.1899	20.2604	20.2763	19.6875	19.5838	19.5426	19.4954	19.5152	19.2992	19.2549	19.2616
21.7444	21.7588	21.4109	21.5813	21.7293	21.7898	22.1356	22.9655	23.0526	22.9336	22.6368	22.6899	22.7655	22.7780	22.1795	22.0805	22.0358	21.9866	22.0110	21.7784	21.7345	21.7389
24.7159	24.7296	24.4164	24.5709	24.7064	24.7909	25.1121	25.9521	26.0417	25.9251	25.6174	25.6585	25.7525	25.7508	25.1562	25.0694	25.0156	24.9833	24.9949	24.7448	24.7157	24.7177
28.6948	28.7231	28.3671	28.5197	28.6899	28.7490	29.0956	29.9793	30.0814	29.9584	29.6041	29.6616	29.7362	29.7572	29.1629	29.0480	29.0210	28.9795	28.9814	28.7443	28.6877	28.6830
31.7137	31.7439	31.3856	31.5539	31.7198	31.7646	32.1282	32.9831	33.0899	32.9691	32.6263	32.6780	32.7431	32.7791	32.1557	32.0430	32.0331	31.9781	31.9844	31.7709	31.6935	31.7056
34.6879	34.7109	34.4401	34.5820	34.7306	34.8093	35.1340	35.9561	36.0719	35.9468	35.6331	35.6633	35.7491	35.7576	35.1484	35.0531	35.0128	34.9744	34.9794	34.7233	34.6899	34.6841
38.9397	38.9559	38.6559	38.8353	38.9622	39.0318	39.3751	40.1813	40.3064	40.1776	39.8699	39.9045	39.9744	40.0048	39.3936	39.2878	39.2776	39.2265	39.2271	38.9846	38.9302	38.9237
43.6753	43.6904	43.3814	43.5303	43.6684	43.7504	44.0763	44.9243	45.0418	44.9250	44.5948	44.6218	44.7043	44.7234	44.1061	44.0131	43.9884	43.9449	43.9469	43.7118	43.6736	43.6601
48.6645	48.6755	48.4257	48.5966	48.7091	48.7936	49.1312	49.8561	49.9781	49.8619	49.6126	49.6183	49.7037	49.7283	49.1011	49.0220	49.0030	48.9543	48.9621	48.6948	48.6553	48.6496
1.2025	1.1810	1.5823	1.4160	1.2482	1.2050	0.8488	-0.0554	-0.1084	0.0075	0.3567	0.2709	0.1993	0.1973	0.7665	0.8818	0.9451	0.9862	0.9585	1.1657	1.2144	1.1976
1.0026	1.0027	1.0001	1.0002	1.0010	1.0002	1.0007	1.0030	1.0015	1.0016	1.0005	1.0019	1.0017	1.0012	1.0024	1.0019	1.0009	1.0010	1.0016	1.0026	1.0025	1.0031
0.0219	0.0165	0.0321	0.0425	0.0234	0.0201	0.0295	-0.0059	-0.0115	-0.0055	0.0068	-0.0005	-0.0056	-0.0016	0.0013	0.0029	0.0052	0.0016	0.0049	0.0149	0.0177	0.0184
0.0044	-0.0007	-0.0047	0.0021	-0.0006	-0.0004	-0.0002	-0.0208	-0.0221	-0.0225	0.0052	0.0043	0.0039	0.0032	-0.0008	0.0044	0.0006	-0.0047	0.0047	0.0005	0.0036	0.0033
-0.0162	-0.0217	0.0011	-0.0077	-0.0204	0.0014	-0.0217	-0.0252	-0.0286	-0.0264	-0.0127	-0.0214	-0.0040	-0.0204	-0.0169	-0.0010	-0.0169	-0.0049	-0.0066	-0.0255	-0.0077	-0.0088
-0.0268	-0.0173	-0.0479	-0.0580	-0.0330	-0.0396	-0.0353	0.0141	0.0170	0.0133	-0.0239	-0.0106	-0.0135	-0.0091	-0.0006	-0.0148	-0.0079	-0.0047	-0.0138	-0.0156	-0.0257	-0.0313
0.0001	0.0118	-0.0291	-0.0232	0.0000	-0.0234	-0.0007	0.0269	0.0299	0.0288	-0.0002	0.0115	-0.0014	0.0165	-0.0007	-0.0141	0.0069	-0.0030	-0.0059	0.0188	-0.0123	0.0007
-0.0178	-0.0130	0.0258	0.0056	0.0138	0.0220	0.0072	0.0090	0.0163	0.0113	0.0082	0.0025	0.0097	-0.0014	-0.0008	0.0017	-0.0108	-0.0037	-0.0061	-0.0211	-0.0084	-0.0118
0.0452	0.0435	0.0420	0.0598	0.0497	0.0454	0.0513	0.0469	0.0570	0.0488	0.0472	0.0519	0.0423	0.0510	0.0546	0.0446	0.0579	0.0528	0.0483	0.0512	0.0426	0.0409
-0.0067	-0.0089	-0.0321	-0.0442	-0.0393	-0.0350	-0.0443	0.0041	-0.0008	0.0037	-0.0255	-0.0218	-0.0197	-0.0246	-0.0216	-0.0211	-0.0271	-0.0239	-0.0243	-0.0095	-0.0020	-0.0082

Std deviation for row
0.011
0.010
0.010
0.017
0.016
0.029
0.011
0.017

0.0000 Max Diff
0.0264 std dev all data

98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119
0.0020	-0.0115	-0.0326	-0.0116	-0.0299	-0.0203	0.0073	0.0059	-0.0279	0.0017	-0.0076	-0.0062	0.0008	0.0016	-0.0282	-0.0146	-0.0357	-0.0252	-0.0213	-0.0116	0.0023	0.0050
-0.0246	-0.0310	-0.0255	-0.0082	-0.0066	-0.0201	0.0034	-0.0190	-0.0511	-0.0249	-0.0213	-0.0145	0.0052	-0.0078	-0.0406	-0.0273	-0.0440	-0.0440	-0.0348	-0.0286	-0.0246	-0.0182
-0.0394	-0.0408	-0.0333	-0.0258	-0.0320	-0.0329	-0.0279	-0.0186	-0.0532	-0.0233	-0.0441	-0.0472	-0.0388	-0.0387	-0.0647	-0.0549	-0.0616	-0.0581	-0.0563	-0.0491	-0.0371	-0.0407
0.0060	0.0139	0.0146	0.0392	0.0234	0.0263	0.0250	0.0427	0.0089	0.0371	0.0064	0.0157	0.0052	0.0262	-0.0126	0.0106	-0.0088	-0.0015	-0.0028	0.0017	0.0218	0.0050
-0.0858	-0.0868	-0.0999	-0.0871	-0.0808	-0.0909	-0.0690	0.0007	-0.0346	-0.0054	-0.0370	-0.0404	-0.0248	-0.0215	-0.0622	-0.0488	-0.0594	-0.0605	-0.0539	-0.0908	-0.0837	-0.0790
-0.0445	-0.0371	0.0074	0.0289	0.0241	0.0205	0.0277	-0.0163	-0.0493	-0.0239	0.0118	0.0193	0.0165	0.0296	-0.0234	-0.0113	-0.0145	-0.0251	-0.0186	-0.0454	-0.0320	-0.0386
-0.0749	-0.0675	-0.0025	0.0114	-0.0006	0.0001	-0.0155	-0.0277	-0.0554	-0.0351	-0.0282	-0.0279	-0.0344	-0.0197	-0.0583	-0.0399	-0.0460	-0.0470	-0.0444	-0.0759	-0.0612	-0.0689
-0.0914	-0.0816	-0.0608	-0.0669	-0.0570	-0.0763	-0.0722	-0.0478	-0.0752	-0.0533	-0.0594	-0.0555	-0.0507	-0.0540	-0.0782	-0.0729	-0.0746	-0.0684	-0.0652	-0.0927	-0.0834	-0.0815
-0.0843	-0.0712	-0.0168	-0.0342	-0.0206	-0.0437	-0.0634	-0.1053	-0.1325	-0.1108	-0.0632	-0.0627	-0.0837	-0.0762	-0.0862	-0.0732	-0.0790	-0.0788	-0.0711	-0.0707	-0.0664	-0.0600
							0.1053	0.1325	0.1108												

98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119
0.0452	0.0483	0.0911	0.0880	0.0567	0.0570	0.0765	0.0353	0.0060	0.0303	0.0379	0.0123	0.0055	0.0253	0.0225	0.0104	0.0051	0.0211	0.0246	0.0366	0.0713	0.0606
-0.073	-0.084	-0.015	0.000	-0.025	-0.031	-0.040	-0.094	-0.125	-0.098	-0.082	-0.102	-0.120	-0.112	-0.110	-0.097	-0.110	-0.107	-0.097	-0.079	-0.060	-0.067
0.0505	0.0435	0.1313	0.1329	0.1165	0.1097	0.0842	0.0123	-0.0170	0.0062	0.0231	0.0130	-0.0072	-0.0054	0.0045	0.0104	0.0087	0.0094	0.0152	0.0343	0.0742	0.0538
-0.0535	-0.0605	-0.0360	-0.0311	-0.0343	-0.0486	-0.0597	-0.0553	-0.0847	-0.0619	-0.0694	-0.0747	-0.0948	-0.0857	-0.0837	-0.0781	-0.0909	-0.0915	-0.0761	-0.0632	-0.0263	-0.0440
-0.0055	0.0048	0.0002	-0.0095	-0.0109	-0.0144	0.0051	0.0202	-0.0053	0.0107	0.0253	0.0277	0.0129	0.0325	0.0264	0.0145	0.0154	0.0239	0.0380	-0.0099	0.0338	0.0203
0.0153	0.0244	0.0282	0.0293	0.0200	0.0221	0.0276	0.0329	0.0068	0.0215	0.0455	0.0432	0.0315	0.0380	0.0539	0.0424	0.0438	0.0458	0.0592	0.0020	0.0536	0.0380
-0.1077	-0.0836	0.0003	-0.0123	-0.0203	-0.0384	-0.0410	-0.0807	-0.1087	-0.0931	-0.0603	-0.0706	-0.0874	-0.0793	-0.0747	-0.0837	-0.0807	-0.0874	-0.0732	-0.1211	-0.0565	-0.0758
0.0227	0.0455	0.0162	0.0262	0.0237	0.0132	0.0172	-0.0592	-0.0861	-0.0730	0.0245	0.0268	0.0018	0.0019	0.0374	0.0286	0.0344	0.0338	0.0503	0.0212	0.0711	0.0529
0.1077		0.1313	0.1329	0.1165	0.1097			0.1249			0.1024	0.1198	0.1119	0.1105		0.1098	0.1072		0.1211		

Calculation of regression values used to correct themocouple readings for coldtrap experiment.

Conducted on April 15, 2004

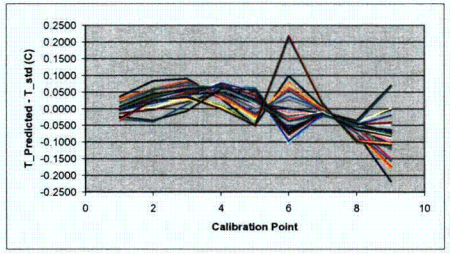
Thermocouple check

	Thermocouple no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Thermometer reading oC																														
*	21.70	18.5059	19.0361	18.8956	19.4022	19.5043	20.2635	20.9384	20.0010	20.2129	20.3021	20.4130	20.6547	20.6600	19.9159	19.9935	20.0182	20.0557	20.0694	19.4210	19.4013	18.7499	18.8754	19.0568	19.3703	19.7936	19.6936	20.8931	20.0911	20.3117	20.3595
*	26.10	22.9651	23.4796	23.3329	23.8454	23.9499	24.6731	25.3215	24.4461	24.6439	24.7274	24.8481	25.0649	25.0748	24.3735	24.4413	24.4789	24.5038	24.5274	23.9056	23.8742	23.1918	23.3181	23.4985	23.8104	24.2195	24.1437	25.2776	24.5353	24.7330	24.7837
*	31.00	27.8848	28.4052	28.2766	28.7639	28.8511	29.5969	30.2640	29.3519	29.5729	29.6543	29.7526	29.9963	30.0002	29.2936	29.3785	29.3951	29.4303	29.4467	28.8288	28.8103	28.1269	28.2537	28.4312	28.7291	29.1411	29.0639	30.2004	29.4476	29.6566	29.7092
*	40.40	37.2511	37.7897	37.6503	38.1654	38.2585	39.0230	39.7006	38.7711	38.9991	39.0886	39.1997	39.4418	39.4396	38.7213	38.7922	38.8243	38.8548	38.8824	38.2456	38.2153	37.5044	37.6401	37.8164	38.1298	38.5543	38.4769	39.6556	38.8729	39.0848	39.1355
*	45.60	42.3852	42.9516	42.7966	43.3206	43.4103	44.2035	44.8849	43.9361	44.1806	44.2518	44.3651	44.6246	44.6168	43.8804	43.9542	43.9824	44.0131	44.0482	43.4126	43.3777	42.6596	42.7857	42.9635	43.2871	43.7241	43.6400	44.8467	44.0372	44.2591	44.3019
*	36.90	33.8097	34.3129	34.1835	34.6560	34.7338	35.4529	36.0659	35.1461	35.3556	35.4239	35.5385	35.7614	35.7575	35.1352	35.2051	35.2339	35.2556	35.2850	34.9370	34.9130	34.0388	34.1474	34.3181	34.6046	35.0032	34.8673	36.0277	35.2385	35.4376	35.4836
*	41.80	38.6274	39.1542	39.0185	39.5245	39.6015	40.3673	41.0075	40.0865	40.3129	40.3918	40.5031	40.7501	40.7464	40.0529	40.1249	40.1519	40.1808	40.2064	39.6512	39.6234	38.8701	38.9948	39.1643	39.4736	39.8919	39.7958	40.9844	40.1908	40.4042	40.4509
*	49.60	46.3714	46.9219	46.7646	47.2810	47.3511	48.1302	48.7721	47.8600	48.0925	48.1629	48.2782	48.5272	48.5169	47.8137	47.8888	47.9103	47.9476	47.9738	47.3724	47.3492	46.6203	46.7466	46.9124	47.2327	47.6569	47.5797	48.7494	47.9731	48.1729	48.2189
*	22.55	19.1025	19.7139	19.5515	20.1332	20.2442	21.1235	21.8845	20.7644	20.9902	21.1011	21.2276	21.5107	21.5086	20.6720	20.7589	20.7861	20.8255	20.8484	20.1988	20.1725	19.3889	19.5266	19.7293	20.0832	20.5807	20.4039	21.8371	20.8648	21.1156	21.1697
	Intercept	3.2805	2.7328	2.8747	2.3372	2.2103	1.4208	0.6899	1.7164	1.5243	1.4113	1.2923	1.0471	1.0310	1.8290	1.7447	1.7152	1.6794	1.6700	2.3285	2.3489	3.0319	2.9006	2.6982	2.3718	1.9178	2.0676	0.7578	1.6365	1.4007	1.3441
	Slope	0.9973	0.9976	0.9976	0.9984	0.9995	1.0001	1.0019	0.9995	0.9986	0.9995	0.9997	0.9997	1.0002	0.9978	0.9980	0.9981	0.9982	0.9978	0.9957	0.9959	0.9973	0.9974	0.9982	0.9986	0.9994	0.9979	1.0012	0.9989	0.9996	0.9998

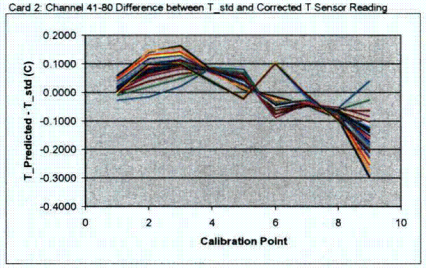
Difference between the corrected temperature reading and the standard thermometer reading. Corrected Temperature Reading (applied Slope and Offset to the above reading).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	0.0362	0.0225	0.0252	0.0081	0.0049	-0.0138	-0.0309	0.0067	0.0085	0.0029	-0.0019	-0.0053	-0.0056	0.0004	-0.0010	-0.0044	-0.0003	-0.0051	-0.0345	-0.0303	0.0307	0.0277	0.0208	0.0147	-0.0002	0.0200	-0.0248	0.0056	0.0036	-0.0004
	0.0834	0.0553	0.0519	0.0440	0.0483	-0.0038	-0.0393	0.0494	0.0332	0.0260	0.0317	0.0033	0.0099	0.0481	0.0380	0.0478	0.0399	0.0431	0.0307	0.0241	0.0605	0.0589	0.0545	0.0485	0.0231	0.0608	-0.0353	0.0449	0.0230	0.0229
	0.0897	0.0689	0.0839	0.0546	0.0471	0.0206	0.0129	0.0526	0.0552	0.0504	0.0344	0.0330	0.0361	0.0572	0.0655	0.0549	0.0577	0.0515	0.0327	0.0396	0.0822	0.0819	0.0784	0.0603	0.0418	0.0706	-0.0068	0.0518	0.0444	0.0475
	0.0307	0.0305	0.0352	0.0409	0.0497	0.0475	0.0678	0.0668	0.0680	0.0799	0.0783	0.0753	0.0771	0.0638	0.0608	0.0662	0.0656	0.0662	0.0088	0.0056	0.0341	0.0443	0.0466	0.0476	0.0494	0.0639	0.0594	0.0669	0.0685	0.0719
	-0.0492	-0.0201	-0.0307	-0.0122	-0.0010	0.0285	0.0622	0.0289	0.0422	0.0404	0.0418	0.0563	0.0551	0.0115	0.0127	0.0145	0.0147	0.0206	-0.0465	-0.0534	-0.0247	-0.0233	-0.0155	-0.0024	0.0161	0.0163	0.0565	0.0255	0.0405	0.0373
	0.0986	0.0621	0.0767	0.0372	0.0268	-0.0230	-0.0740	-0.0563	-0.0703	-0.0830	-0.0817	-0.1039	-0.1056	-0.0142	-0.0192	-0.0175	-0.0272	-0.0232	0.2145	0.2170	0.0779	0.0605	0.0546	0.0275	0.0004	-0.0381	-0.0727	-0.0636	-0.0771	-0.0793
	0.0032	-0.0083	0.0002	-0.0022	-0.0079	-0.0080	-0.0227	-0.0186	-0.0200	-0.0176	-0.0187	-0.0168	-0.0160	-0.0075	-0.0091	-0.0087	-0.0108	-0.0127	0.0083	0.0079	-0.0039	-0.0046	-0.0079	-0.0104	-0.0138	-0.0199	-0.0103	-0.0167	-0.0126	-0.0130
	-0.0738	-0.0596	-0.0721	-0.0582	-0.0622	-0.0444	-0.0430	-0.0492	-0.0515	-0.0505	-0.0464	-0.0424	-0.0441	-0.0640	-0.0605	-0.0650	-0.0577	-0.0625	-0.1039	-0.0983	-0.0748	-0.0726	-0.0736	-0.0623	-0.0533	-0.0523	-0.0363	-0.0429	-0.0473	-0.0464
	-0.2188	-0.1513	-0.1704	-0.1121	-0.1056	-0.0037	0.0671	-0.0804	-0.0653	-0.0485	-0.0376	0.0004	-0.0069	-0.0952	-0.0871	-0.0879	-0.0819	-0.0778	-0.1100	-0.1123	-0.1820	-0.1728	-0.1579	-0.1234	-0.0636	-0.1213	0.0702	-0.0716	-0.0429	-0.0404
List Maximum Diff (T_sensor- T_std) (only list if >0.1 C)	0.219	0.151	0.170	0.112	0.106							0.104	0.106						0.214	0.217	0.182	0.173	0.158	0.123		0.121				

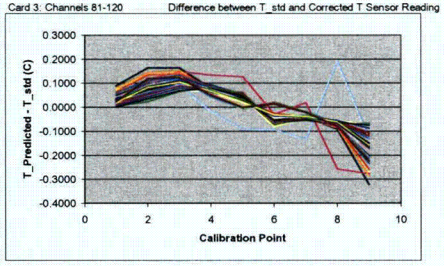
Card 1: Channel 1-40 Difference between T_std and Corrected T Sensor Reading



Card 2: Channel 41-80 Difference between T_std and Corrected T Sensor Reading



Card 3: Channels 81-120 Difference between T_std and Corrected T Sensor Reading



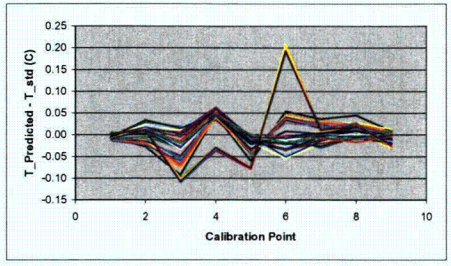
APR 16

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Thermometer reading oC																														
	21.20	17.8683	18.4385	18.2777	18.8156	18.9239	19.7336	20.4417	19.4276	19.6434	19.7419	19.8631	20.1227	20.1157	19.3406	19.4206	19.4503	19.4802	19.5020	18.8706	18.8477	18.1248	18.2584	18.4397	18.7684	19.2364	19.1067	20.3923	19.5259	19.7514	19.8091
	27.25	23.9732	24.5307	24.3860	24.9009	24.9909	25.7949	26.4793	25.4939	25.7104	25.7975	25.9142	26.1809	26.1738	25.4256	25.4986	25.5309	25.5588	25.5799	24.9639	24.9512	24.2274	24.3524	24.5225	24.8545	25.3076	25.1818	26.4454	25.5954	25.8132	25.8596
	33.10	29.8287	30.3681	30.2219	30.7375	30.8284	31.6087	32.2783	31.3228	31.5492	31.6269	31.7481	32.0010	31.9997	31.2465	31.3257	31.3426	31.3675	31.3977	30.7541	30.7334	30.0753	30.2049	30.3783	30.6901	31.1371	31.0250	32.2403	31.4231	31.6370	31.6943
	35.10	31.9929	32.4991	32.3617	32.8501	32.9325	33.6613	34.2848	33.3967	33.6130	33.6901	33.8014	34.0415	34.0333	33.3265	33.3951	33.4183	33.4433	33.4701	32.8379	32.8214	32.2139	32.3431	32.5062	32.8016	33.2180	33.1226	34.2572	33.4997	33.6977	33.7473
	43.70	40.5931	41.0809	40.9525	41.4063	41.4782	42.1838	42.7636	41.9336	42.1389	42.1969	42.3173	42.5442	42.5287	41.8883	41.9568	41.9697	41.9998	42.0215	41.4531	41.4394	40.8157	40.9300	41.0782	41.3648	41.7617	41.6851	42.7449	42.0300	42.2241	42.2611
Change TC93	36.85	33.7733	34.2549	34.1297	34.5983	34.6745	35.3827	35.9718	35.0615	35.2718	35.3475	35.4508	35.6771	35.6767	35.0465	35.1177	35.1333	35.1523	35.1829	34.8345	34.8256	33.9869	34.0976	34.2567	34.5403	34.9358	34.7953	35.9327	35.1561	35.3505	35.3969
	22.50	19.2291	19.7753	19.6294	20.1511	20.2534	21.0319	21.7031	20.7360	20.9398	21.0374	21.1396	21.4015	21.4075	20.6582	20.7283	20.7693	20.7881	20.8168	20.1841	20.1701	19.4819	19.6076	19.7876	20.1072	20.5448	20.4254	21.6651	20.8299	21.0443	21.0875
	44.00	41.0026	41.4433	41.3305	41.7785	41.8315	42.5346	43.0802	42.2626	42.4574	42.5129	42.6429	42.8743	42.8461	42.2260	42.2758	42.3114	42.3195	42.3572	41.8569	41.8233	41.1826	41.2982	41.4233	41.7147	42.1130	41.9913	43.0507	42.3539	42.5200	42.5589
	29.70	26.4891	27.0119	26.8834	27.3749	27.4661	28.2259	28.8636	27.9324	28.1491	28.2215	28.3486	28.5937	28.5790	27.8717	27.9413	27.9652	27.9875	28.0252	27.3950	27.3794	26.7288	26.8508	27.0218	27.3261	27.7512	27.6546	28.8284	28.0371	28.2445	28.2851
	Intercept	3.5418	2.8967	3.0750	2.4785	2.3367	1.4425	0.6139	1.7810	1.5548	1.4226	1.3163	1.0186	1.0029	1.9035	1.8128	1.7697	1.7376	1.7161	2.4789	2.4905	3.2367	3.0952	2.8765	2.5163	2.0072	2.1484	0.6740	1.6775	1.4156	1.3546
	Slope	0.9878	0.9923	0.9909	0.9944	0.9963	1.0009	1.0070	0.9993	0.9998	1.0015	1.0012	1.0028	1.0036	0.9973	0.9979	0.9985	0.9988	0.9986	0.9925	0.9926	0.9904	0.9910	0.9929	0.9948	0.9976	0.9966	1.0062	0.9995	1.0013	1.0018

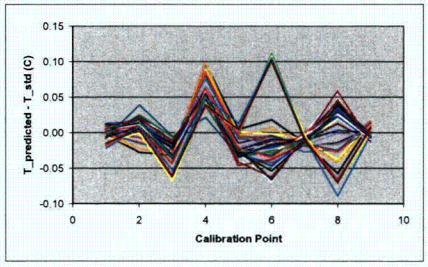
Difference between the corrected temperature reading and the standard thermometer reading.
Use the slope and offset to compute the corrected temperature and compare to Standard Thermometer reading. DT=T_predicted - T_std (C)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	-0.01	-0.01	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.01	0.00	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	-0.01	-0.01	-0.01	0.00
	-0.03	-0.01	-0.01	-0.01	-0.01	0.01	0.03	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0.00	0.01	0.00	-0.02	-0.02	-0.02	-0.01	0.00	0.00	0.03	0.01	0.01
	-0.09	-0.07	-0.08	-0.06	-0.05	-0.02	0.02	-0.02	0.00	0.00	0.00	0.01	0.02	-0.04	-0.03	-0.03	-0.03	-0.03	-0.10	-0.10	-0.08	-0.07	-0.06	-0.05	-0.03	-0.03	0.01	-0.02	0.00	0.01
	0.04	0.05	0.04	0.05	0.05	0.04	0.04	0.05	0.06	0.06	0.06	0.06	0.06	0.04	0.04	0.04	0.04	0.04	-0.03	-0.03	0.04	0.05	0.05	0.05	0.04	0.06	0.04	0.06	0.06	0.06
	-0.06	-0.04	-0.05	-0.05	-0.04	-0.03	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.01	-0.02	-0.08	-0.07	-0.04	-0.04	-0.04	-0.03	-0.03	-0.01	-0.02	-0.01	0.00	-0.01
	0.05	0.04	0.04	0.03	0.03	0.01	-0.01	-0.03	-0.03	-0.03	-0.04	-0.05	-0.04	0.00	0.01	0.00	0.00	0.00	0.20	0.21	0.05	0.04	0.04	0.03	0.01	-0.02	-0.02	-0.04	-0.04	-0.03
	0.04	0.02	0.03	0.02	0.02	-0.01	-0.03	0.00	-0.01	-0.01	-0.02	-0.02	-0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.03	0.03	0.02	0.02	0.00	0.01	-0.03	0.00	-0.01	-0.02
	0.04	0.02	0.03	0.02	0.01	0.02	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.02	0.01	0.01	0.02	0.01	0.02	0.02	0.01	0.01	0.02	0.00	-0.01	0.01	-0.01	-0.01
	0.01	0.00	0.01	0.00	0.00	-0.01	-0.02	-0.01	0.00	-0.01	0.00	-0.01	-0.02	0.00	0.00	-0.01	-0.01	0.00	-0.03	-0.03	0.01	0.01	0.01	0.00	-0.01	0.01	-0.02	0.00	0.00	-0.01
List Maximum Diff (T_sensor- T_std) (only list if >0.1 C)																			0.201	0.210										

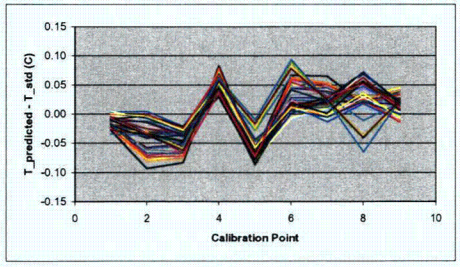
Card 1: Channel 1-40 Difference between T_std and Corrected T Sensor Reading



Card 2: Channel 41-80 Difference between T_std and Corrected T Sensor Reading



Card 3: Channels 81-120 Difference between T_std and Corrected T Sensor Reading



31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
20.5371	19.9787	19.9771	20.0147	20.0752	20.1012	19.4678	19.4406	19.4121	19.4059	18.4874	19.0327	18.8908	19.3784	19.4897	20.2431	21.0001	20.0196	20.2219	20.3701	20.4719	20.0417	20.0391	20.0381	20.0344	20.0622	20.0769	19.4687	19.4031	19.4030	18.6830	18.8691	19.0539
24.9569	24.4322	24.4237	24.4584	24.5266	24.5492	23.9438	23.9213	23.8864	23.8756	22.9759	23.5124	23.3752	23.8566	23.9584	24.6763	25.4044	24.4929	24.6827	24.8283	24.9299	24.5256	24.5233	24.5211	24.5124	24.5448	24.5626	23.9801	23.9223	23.9154	23.1641	23.3545	23.5336
29.8759	29.3607	29.3520	29.3836	29.4583	29.4920	28.8664	28.8511	28.8227	28.8069	27.9064	28.4311	28.2840	28.7653	28.8665	29.5959	30.3338	29.4140	29.6044	29.7404	29.8408	29.4394	29.4348	29.4407	29.4269	29.4684	29.4774	28.8951	28.8354	28.8251	28.0842	28.2705	28.4474
39.3131	38.7857	38.7846	38.8139	38.9031	38.9339	38.2847	38.2615	38.2228	38.2084	37.2343	37.7771	37.6269	38.1194	38.2320	38.9921	39.7844	38.7779	38.9855	39.1266	39.2171	38.8161	38.8104	38.8192	38.8010	38.8481	38.8494	38.2649	38.2091	38.2011	37.4069	37.6071	37.7949
44.4864	43.9544	43.9450	43.9770	44.0721	44.1089	43.4435	43.4301	43.3963	43.3790	42.3737	42.9438	42.7804	43.2906	43.3958	44.1723	44.9698	43.9497	44.1529	44.2937	44.3894	43.9699	43.9621	43.9981	43.9587	44.0134	44.0052	43.4266	43.3845	43.3609	42.5550	42.7636	42.9537
35.6407	35.1835	35.1821	35.2106	35.2860	35.3181	34.9771	34.9643	34.9212	34.9134	33.6368	34.1733	34.0243	34.5103	34.6134	35.3579	36.1169	35.1228	35.3269	35.4624	35.5655	35.1889	35.1886	35.2038	35.1973	35.2330	35.2324	34.8218	34.7621	34.7571	33.8115	33.9995	34.1824
40.6216	40.1122	40.1122	40.1329	40.2249	40.2561	39.6956	39.6767	39.6463	39.6274	38.5138	39.0729	38.9193	39.4054	39.5149	40.2724	41.0526	40.0567	40.2532	40.3999	40.4994	40.1076	40.0943	40.1190	40.0996	40.1462	40.1407	39.6242	39.5631	39.5560	38.6929	38.8924	39.0821
48.3866	47.8758	47.8815	47.9086	48.0134	48.0436	47.4188	47.4077	47.3670	47.3450	46.2793	46.8434	46.6732	47.1776	47.2674	48.0404	48.8276	47.8322	48.0254	48.1819	48.2659	47.8726	47.8583	47.8866	47.8578	47.9146	47.9054	47.3725	47.2972	47.3108	46.4621	46.6613	46.8481
21.3713	20.7521	20.7483	20.7907	20.8481	20.8882	20.2501	20.2291	20.1793	20.1776	18.9838	19.6117	19.4485	20.0228	20.1554	21.0297	21.9152	20.7010	20.9391	21.0991	21.2202	20.7236	20.7111	20.7255	20.7096	20.7490	20.7638	20.1226	20.0564	20.0421	19.1891	19.4186	19.6375
1.1539	1.7596	1.7690	1.7217	1.6947	1.6660	2.2796	2.3103	2.3465	2.3414	3.2988	2.7304	2.8633	2.3415	2.2125	1.4241	0.6400	1.6938	1.4736	1.3235	1.1977	1.6779	1.6780	1.6977	1.6872	1.6730	1.6360	2.2982	2.3570	2.3751	3.1041	2.8928	2.6954
1.0002	0.9979	0.9977	0.9982	0.9966	0.9966	0.9959	0.9955	0.9955	0.9961	0.9985	0.9989	0.9995	1.0002	1.0008	1.0015	1.0016	1.0001	1.0006	1.0008	1.0015	0.9995	0.9998	0.9987	0.9996	0.9987	0.9997	0.9966	0.9967	0.9983	0.9989	0.9992	0.9995
-0.0039	-0.0030	0.0010	0.0007	0.0026	-0.0018	-0.0324	-0.0361	-0.0282	-0.0289	0.0584	0.0421	0.0448	0.0232	0.0183	-0.0025	-0.0270	0.0160	0.0086	0.0094	0.0013	0.0105	0.0121	0.0104	0.0128	0.0094	0.0070	0.0005	-0.0040	0.0060	0.0466	0.0475	0.0400
0.0169	0.0413	0.0376	0.0365	0.0391	0.0310	0.0253	0.0246	0.0262	0.0232	0.1402	0.1169	0.1270	0.1022	0.0907	0.0374	-0.0158	0.0899	0.0723	0.0711	0.0662	0.0924	0.0952	0.0877	0.0887	0.0863	0.0915	0.0965	0.1002	0.1017	0.1428	0.1294	0.1175
0.0372	0.0595	0.0548	0.0529	0.0543	0.0568	0.0277	0.0324	0.0404	0.0351	0.1632	0.1301	0.1334	0.1117	0.1029	0.0643	0.0214	0.1116	0.0972	0.0870	0.0846	0.1039	0.1055	0.1011	0.1011	0.1036	0.1048	0.0947	0.0971	0.0931	0.1575	0.1417	0.1289
0.0767	0.0650	0.0662	0.0665	0.0674	0.0663	0.0075	0.0006	-0.0016	-0.0003	0.0771	0.0657	0.0718	0.0674	0.0761	0.0747	0.0868	0.0768	0.0843	0.0805	0.0755	0.0764	0.0789	0.0677	0.0711	0.0712	0.0741	0.0324	0.0398	0.0343	0.0700	0.0711	0.0718
0.0513	0.0230	0.0149	0.0203	0.0191	0.0235	-0.0549	-0.0539	-0.0512	-0.0500	0.0088	0.0267	0.0227	0.0394	0.0442	0.0826	0.0803	0.0492	0.0551	0.0517	0.0557	0.0279	0.0293	0.0400	0.0265	0.0298	0.0284	-0.0235	-0.0218	-0.0251	0.0125	0.0237	0.0282
-0.0966	-0.0297	-0.0282	-0.0304	-0.0375	-0.0371	0.2134	0.2181	0.2116	0.2176	-0.0150	-0.0341	-0.0291	-0.0423	-0.0455	-0.0651	-0.0864	-0.0789	-0.0766	-0.0865	-0.0818	-0.0492	-0.0421	-0.0432	-0.0310	-0.0393	-0.0419	0.1011	0.1042	0.1030	-0.0215	-0.0337	-0.0389
-0.0145	-0.0112	-0.0093	-0.0169	-0.0152	-0.0160	0.0125	0.0095	0.0155	0.0131	-0.0453	-0.0399	-0.0365	-0.0464	-0.0400	-0.0432	-0.0430	-0.0443	-0.0472	-0.0451	-0.0403	-0.0327	-0.0376	-0.0342	-0.0308	-0.0324	-0.0350	-0.0128	-0.0108	-0.0159	-0.0454	-0.0445	-0.0415
-0.0475	-0.0637	-0.0575	-0.0550	-0.0527	-0.0553	-0.0959	-0.0941	-0.0983	-0.0996	-0.0915	-0.0780	-0.0864	-0.0728	-0.0811	-0.0835	-0.0558	-0.0678	-0.0699	-0.0571	-0.0618	-0.0713	-0.0755	-0.0764	-0.0761	-0.0740	-0.0726	-0.0910	-0.1021	-0.0899	-0.0847	-0.0816	-0.0793
-0.0195	-0.0812	-0.0795	-0.0746	-0.0770	-0.0675	-0.1033	-0.1011	-0.1144	-0.1102	-0.2960	-0.2296	-0.2477	-0.1823	-0.1655	-0.0647	0.0396	-0.1525	-0.1238	-0.1110	-0.0993	-0.1579	-0.1660	-0.1531	-0.1623	-0.1547	-0.1563	-0.1979	-0.2028	-0.2072	-0.2778	-0.2535	-0.2267
						0.213	0.218	0.212	0.218	0.296	0.230	0.246	0.182	0.165			0.153	0.124	0.111		0.158	0.166	0.153	0.162	0.155	0.156	0.198	0.203	0.207	0.278	0.253	0.227

31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
19.9875	19.4041	19.4024	19.4401	19.5054	19.5348	18.9167	18.9011	18.8588	18.8509	17.7840	18.3536	18.2059	18.7316	18.8422	19.6383	20.4419	19.4044	19.6176	19.7661	19.8785	19.4315	19.4219	19.4389	19.4226	19.4551	19.4780	18.8626	18.7992	18.7849	17.9715	18.1786	18.3742
28.0378	25.4833	25.4861	25.5155	25.5871	25.6205	25.0167	25.0063	24.9602	24.9543	23.8778	24.4491	24.2913	24.8142	24.9242	25.7226	26.5128	25.4746	25.6872	25.8310	25.9501	25.5189	25.5052	25.5258	25.5082	25.5477	25.5610	24.9770	24.9065	24.9001	24.0657	24.2769	24.4636
31.8565	31.2998	31.2963	31.3459	31.4161	31.4412	30.7962	30.7822	30.7391	30.7309	29.7908	30.3299	30.1822	30.6749	30.7832	31.5405	32.2946	31.3272	31.5219	31.6716	31.7827	31.3503	31.3413	31.3553	31.3392	31.3799	31.3935	30.7862	30.7292	30.7205	29.9694	30.1687	30.3572
33.9084	33.3759	33.3822	33.4168	33.4835	33.5201	32.8778	32.8667	32.8308	32.8253	31.9433	32.4557	32.3200	32.7755	32.8792	33.6004	34.3134	33.4189	33.5987	33.7477	33.8392	33.4465	33.4373	33.4555	33.4380	33.4735	33.4741	32.9011	32.8325	32.8379	32.1214	32.3037	32.4804
42.4221	41.9203	41.9431	41.9667	42.0565	42.0853	41.5043	41.4907	41.4578	41.4445	40.5479	41.0401	40.9083	41.3328	41.4415	42.1285	42.8239	41.9594	42.1379	42.2939	42.3637	41.9895	41.9768	42.0211	41.9809	42.0401	42.0256	41.5044	41.4378	41.4538	40.7106	40.8968	41.0711
35.5437	35.0797	35.0757	35.1123	35.1752	35.2193	34.8802	34.8642	34.8202	34.8137	33.6334	34.1325	33.9949	34.4456	34.5680	35.2934	36.0071	35.0630	35.2559	35.3829	35.4923	35.1232	35.1119	35.1201	35.1187	35.1524	35.1575	34.7313	34.6599	34.6673	33.7973	33.9732	34.1593
21.2701	20.7200	20.7117	20.7413	20.8097	20.8474	20.2305	20.2215	20.1806	20.1691	19.0866	19.6478	19.5133	20.0095	20.1301	20.9355	21.7314	20.6910	20.8908	21.0591	21.1598	20.7200	20.7134	20.7259	20.7078	20.7554	20.7709	20.1832	20.1180	20.1011	19.2721	19.4796	19.6703
42.7267	42.2514	42.2515	42.2556	42.3458	42.3879	41.9025	41.9017	41.8647	41.8431	40.7888	41.3205	41.1696	41.6189	41.7439	42.4711	43.1914	42.3222	42.5052	42.6799	42.7535	42.3423	42.3115	42.3745	42.3023	42.3955	42.3757	41.7375	41.6735	41.6857	40.9758	41.1763	41.3555
28.4524	27.9151	27.9250	27.9547	28.0320	28.0619	27.4489	27.4346	27.3996	27.3906	26.3976	26.9358	26.8018	27.2768	27.3917	28.1381	28.9021	27.9216	28.1156	28.2711	28.3711	27.9536	27.9407	27.9647	27.9459	27.9807	27.9937	27.4311	27.3677	27.3609	26.5764	26.7805	26.9647
1.1578	1.8094	1.8242	1.7714	1.7233	1.6955	2.4297	2.4478	2.4955	2.4959	3.6141	3.0000	3.1450	2.5618	2.4518	1.5646	0.6680	1.8852	1.6515	1.5052	1.3576	1.8508	1.8479	1.8681	1.8469	1.8459	1.7910	2.4188	2.4823	2.5244	3.4177	3.1947	2.9911
1.0027	0.9988	0.9982	0.9990	0.9981	0.9979	0.9925	0.9923	0.9920	0.9924	0.9887	0.9916	0.9914	0.9951	0.9950	0.9995	1.0041	0.9959	0.9972	0.9970	0.9985	0.9959	0.9964	0.9950	0.9965	0.9950	0.9968	0.9946	0.9946	0.9933	0.9894	0.9903	0.9910
0.00	-0.01	-0.01	-0.01	-0.01	-0.01	0.01	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	-0.01	-0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	-0.02	-0.02	-0.02	0.00	0.00	0.00
0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-0.03	-0.01	-0.02	0.00	0.00	0.02	0.04	0.00	0.02	0.01	0.02	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.00	0.01	-0.02	-0.01	-0.02
0.00	-0.03	-0.03	-0.02	-0.02	-0.03	-0.10	-0.11	-0.11	-0.11	-0.03	-0.03	-0.03	-0.01	-0.02	-0.01	-0.01	-0.02	-0.02	-0.02	-0.01	-0.03	-0.02	-0.03	-0.03	-0.03	-0.02	-0.06	-0.05	-0.06	-0.03	-0.03	-0.02
0.06	0.05	0.05	0.05	0.04	0.05	-0.04	-0.04	-0.03	-0.03	0.10	0.08	0.09	0.08	0.07	0.05	0.02	0.06	0.05	0.05	0.05	0.06	0.07	0.06	0.07	0.05	0.05	0.04	0.04	0.04	0.10	0.09	0.08
0.00	-0.02	-0.01	-0.01	0.00	-0.01	-0.08	-0.08	-0.08	-0.08	0.00	-0.01	0.00	-0.01	-0.01	-0.03	-0.03	-0.03	-0.03	-0.03	-0.04	-0.03	-0.03	-0.02	-0.02	-0.02	-0.03	0.00	0.00	0.00	0.00	0.00	-0.01
-0.05	0.00	-0.01	0.00	-0.02	-0.01	0.20	0.19	0.19	0.19	0.02	-0.01	0.00	-0.01	0.00	-0.01	-0.03	-0.05	-0.04	-0.07	-0.05	-0.02	-0.02	-0.04	-0.01	-0.03	-0.02	0.11	0.11	0.11	0.01	-0.01	-0.01
-0.01	0.00	0.00	-0.01	-0.01	0.00	0.01	0.01	0.02	0.01	-0.01	-0.02	-0.01	-0.03	-0.02	-0.01	-0.01	-0.01	-0.02	0.00	-0.01	-0.01	-0.01	-0.01	-0.02	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02
0.00	0.01	0.00	-0.02	-0.01	0.00	0.02	0.03	0.03	0.02	-0.06	-0.03	-0.04	-0.02	-0.01	0.01	0.04	0.03	0.04	0.06	0.05	0.02	0.01	0.03	0.00	0.03	0.02	-0.07	-0.07	-0.07	-0.04	-0.03	-0.03
-0.01	-0.01	0.00	0.00	0.00	0.00	-0.03	-0.03	-0.02	-0.02	0.01	0.01	0.02	0.00	0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	0.00	0.00	0.01	0.02	0.01
						0.199	0.194	0.189	0.194																		0.111	0.106	0.109			

64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
19.3605	19.7906	20.5441	20.0551	20.1196	20.3169	20.4811	19.9132	20.0404	20.0432	19.9957	20.0451	20.0798	19.4794	19.4514	19.4074	19.4081	21.0085	21.2945	21.1886	21.3413	21.3922	21.7161	21.5797	21.6037	21.6325	21.6676	21.6209	21.6281	21.3078	21.2366	21.0572	21.0553	21.0610
23.8335	24.2471	24.9669	24.5246	24.5844	24.7763	24.9313	24.4031	24.5206	24.5237	24.4756	24.5224	24.5511	23.9912	23.9676	23.9223	23.9198	25.4750	25.7485	25.6434	25.7786	25.8265	26.1248	26.0022	26.0259	26.0543	26.0754	26.0344	26.0371	25.7471	25.6864	25.5106	25.5056	25.5052
28.7392	29.1614	29.8881	29.4377	29.4995	29.6967	29.8530	29.3226	29.4289	29.4348	29.4042	29.4452	29.4654	28.9132	28.8851	28.8403	28.8376	30.3645	30.6447	30.5389	30.6849	30.7372	31.0385	30.9136	30.9307	30.9766	30.9916	30.9513	30.9481	30.6559	30.5820	30.4124	30.4182	30.4120
38.0944	38.5450	39.3062	38.8156	38.8840	39.0821	39.2444	38.6886	38.8089	38.8140	38.7796	38.8208	38.8459	38.2794	38.2625	38.2174	38.2135	39.6586	39.9636	39.8529	39.9885	40.0550	40.3948	40.2602	40.2568	40.3190	40.3401	40.2886	40.3056	39.9825	39.9074	39.7434	39.7482	39.7489
43.2634	43.7090	44.4848	43.9844	44.0486	44.2440	44.4174	43.8470	43.9647	43.9716	43.9409	43.9744	44.0013	43.4388	43.4220	43.3764	43.3719	44.8133	45.1194	45.0076	45.1436	45.2156	45.5586	45.4059	45.3877	45.4759	45.4951	45.4435	45.4627	45.1279	45.0510	44.8892	44.8962	44.8866
34.4791	34.9171	35.6529	35.1609	35.2251	35.4242	35.5801	35.0696	35.1851	35.1865	35.1669	35.2071	35.2286	34.8326	34.8099	34.7641	34.7629	36.0129	36.3261	36.2048	36.3554	36.4254	36.7687	36.6238	36.6218	36.6967	36.7314	36.6803	36.7019	36.3918	36.3142	36.1526	36.1577	36.1504
39.3767	39.8224	40.5794	40.0897	40.1656	40.3602	40.5241	39.9823	40.0999	40.1089	40.0721	40.1201	40.1431	39.6296	39.6112	39.5656	39.5732	40.9360	41.2389	41.1283	41.2629	41.3249	41.6699	41.5207	41.5058	41.5920	41.6176	41.5669	41.5885	41.2696	41.2019	41.0351	41.0477	41.0409
47.1505	47.5886	48.3475	47.8756	47.9274	48.1233	48.3076	47.7525	47.8635	47.8702	47.8455	47.8746	47.9021	47.3714	47.3656	47.3208	47.3144	48.6739	48.7092	48.6795	49.0021	49.0756	49.4169	49.2761	49.2349	49.3422	49.3754	49.3149	49.3421	49.4271	48.9473	48.7840	48.8014	48.7865
19.9899	20.4990	21.3761	20.7503	20.8246	21.0620	21.2429	20.5771	20.7236	20.7246	20.6732	20.7362	20.7656	20.1299	20.0974	20.0460	20.0508	21.4466	21.8333	21.7008	21.9105	21.9885	22.4283	22.2446	22.2671	22.3287	22.3890	22.3496	22.3946	21.9499	21.8786	21.7090	21.7194	21.7128
2.3644	1.9074	1.1108	1.6577	1.5862	1.3645	1.2088	1.8175	1.6762	1.6779	1.7414	1.6718	1.6390	2.2822	2.3268	2.3748	2.3699	0.7377	0.2817	0.5359	0.3303	0.2836	-0.0789	0.0697	-0.0087	0.0093	-0.0396	-0.0116	-0.0212	0.5555	0.4174	0.6035	0.6121	0.6033
1.0003	1.0007	1.0017	1.0001	1.0003	1.0009	1.0006	0.9991	0.9998	0.9998	0.9987	0.9995	0.9997	0.9968	0.9981	0.9980	0.9962	1.0020	1.0072	1.0022	1.0039	1.0034	1.0039	1.0038	1.0060	1.0037	1.0042	1.0048	1.0046	0.9961	1.0035	1.0030	1.0026	1.0030
0.0304	0.0115	-0.0110	0.0153	0.0122	0.0004	0.0026	0.0132	0.0118	0.0125	0.0121	0.0075	0.0132	-0.0013	0.0016	0.0045	0.0037	0.0885	0.0294	0.0711	0.0544	0.0483	0.0230	0.0316	0.0260	0.0208	0.0191	0.0127	0.0054	0.0807	0.0284	0.0237	0.0212	0.0267
0.1046	0.0711	0.0192	0.0853	0.0784	0.0640	0.0555	0.0992	0.0910	0.0911	0.0863	0.0826	0.0832	0.0960	0.1001	0.1013	0.0981	0.1640	0.1154	0.1357	0.1090	0.0976	0.0490	0.0710	0.0746	0.0588	0.0455	0.0474	0.0345	0.1028	0.0937	0.0904	0.0830	0.0841
0.1117	0.0886	0.0485	0.0990	0.0951	0.0890	0.0803	0.1143	0.0981	0.1001	0.1088	0.1031	0.0961	0.1021	0.0983	0.0996	0.0971	0.1634	0.1469	0.1419	0.1344	0.1249	0.0821	0.1011	0.1087	0.0990	0.0823	0.0878	0.0678	0.0925	0.1065	0.1069	0.1081	0.1054
0.0695	0.0787	0.0823	0.0781	0.0825	0.0832	0.0776	0.0721	0.0759	0.0753	0.0724	0.0740	0.0741	0.0380	0.0388	0.0391	0.0371	0.0762	0.1328	0.0764	0.0741	0.0742	0.0753	0.0833	0.0925	0.0756	0.0701	0.0698	0.0680	-0.0170	0.0645	0.0657	0.0620	0.0700
0.0401	0.0482	0.0695	0.0475	0.0487	0.0499	0.0537	0.0259	0.0305	0.0307	0.0273	0.0255	0.0280	-0.0192	-0.0220	-0.0226	-0.0243	0.0413	0.1256	0.0425	0.0492	0.0523	0.0594	0.0486	0.0520	0.0513	0.0468	0.0494	0.0488	-0.0916	0.0261	0.0270	0.0231	0.0228
-0.0467	-0.0517	-0.0771	-0.0772	-0.0776	-0.0781	-0.0891	-0.0438	-0.0471	-0.0506	-0.0358	-0.0378	-0.0422	0.1025	0.0997	0.0997	0.0997	-0.0768	-0.0308	-0.0797	-0.0731	-0.0677	-0.0651	-0.0669	-0.0663	-0.0600	-0.0537	-0.0558	-0.0522	-0.0938	-0.0413	-0.0357	-0.0377	-0.0393
-0.0478	-0.0430	-0.0424	-0.0477	-0.0355	-0.0375	-0.0419	-0.0354	-0.0334	-0.0303	-0.0367	-0.0270	-0.0291	-0.0161	-0.0178	-0.0181	-0.0084	-0.0438	0.0172	-0.0453	-0.0466	-0.0515	-0.0448	-0.0514	-0.0531	-0.0468	-0.0471	-0.0458	-0.0433	-0.1349	-0.0365	-0.0387	-0.0352	-0.0343
-0.0718	-0.0718	-0.0614	-0.0608	-0.0712	-0.0671	-0.0536	-0.0720	-0.0718	-0.0724	-0.0730	-0.0762	-0.0722	-0.0993	-0.0939	-0.0940	-0.0968	-0.0903	-0.2587	-0.0771	-0.0773	-0.0748	-0.0670	-0.0664	-0.0778	-0.0683	-0.0566	-0.0606	-0.0544	0.1910	-0.0640	-0.0666	-0.0617	-0.0657
-0.1901	-0.1296	-0.0275	-0.1395	-0.1326	-0.1038	-0.0852	-0.1735	-0.1551	-0.1564	-0.1613	-0.1518	-0.1512	-0.2028	-0.2048	-0.2095	-0.2061	-0.3225	-0.2779	-0.2656	-0.2241	-0.2034	-0.1121	-0.1509	-0.1567	-0.1304	-0.1065	-0.1050	-0.0746	-0.1297	-0.1774	-0.1726	-0.1629	-0.1696
0.190	0.130		0.139	0.133	0.104		0.173	0.155	0.156	0.161	0.152	0.151	0.203	0.205	0.209	0.206	0.322	0.278	0.266	0.224	0.203	0.112	0.151	0.157	0.130	0.106	0.105		0.191	0.177	0.173	0.183	0.170

TC 93 replaced after initial calibration

64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
18.7074	19.1603	19.9575	19.4427	19.5108	19.7221	19.8987	19.3006	19.4321	19.4336	19.3842	19.4494	19.4744	18.8787	18.8456	18.7969	18.7999	20.2884	20.6259	20.5101	20.6828	20.7394	21.1169	20.9686	20.9876	21.0290	21.0740	21.0448	21.0684		20.6346	20.4679	20.4729	20.4698
24.7869	25.2434	26.0278	25.5125	25.5849	25.8019	25.9694	25.3899	25.5128	25.5159	25.4698	25.5318	25.5857	24.9769	24.9573	24.9088	24.9079	26.3173	26.6539	26.5352	26.7107	26.7741	27.1529	27.0117	27.0211	27.0807	27.1231	27.0896	27.1228		26.6937	26.5295	26.5376	26.5369
30.6551	31.0829	31.8392	31.3631	31.4359	31.6301	31.7985	31.2221	31.3377	31.3464	31.2962	31.3549	31.3877	30.7933	30.7740	30.7268	30.7255	32.2217	32.5382	32.4301	32.5826	32.6503	33.0019	32.8755	32.8773	32.9289	32.9679	32.9299	32.9537		32.5302	32.3740	32.3837	32.3771
32.7722	33.1721	33.8801	33.4501	33.5171	33.7003	33.8639	33.3239	33.4366	33.4457	33.4120	33.4498	33.4757	32.9122	32.8818	32.8407	32.8403	34.4038	34.6840	34.5853	34.7140	34.7742	35.0821	34.9620	34.9652	35.0192	35.0385	34.9911	35.0122		34.6337	34.4667	34.4816	34.4625
41.3434	41.7148	42.3975	42.0061	42.0693	42.2190	42.3847	41.8882	41.9748	41.9961	41.9707	42.0083	42.0305	41.5254	41.4951	41.4497	41.4574	42.9193	43.1833	43.0952	43.2020	43.2698	43.5795	43.4688	43.4576	43.5218	43.5407	43.4900	43.5034		43.1375	42.9765	42.9997	42.9785
34.4366	34.8571	35.5654	35.0832	35.1640	35.3631	35.5025	34.9966	35.1178	35.1142	35.0735	35.1284	35.1659	34.7347	34.7111	34.6565	34.6625	36.1509	36.4303	36.3255	36.4532	36.5093	36.8040	36.6837	36.7083	36.7513	36.7618	36.7281	36.7242	36.3903	36.3472	36.1749	36.1843	36.1721
19.9950	20.4598	21.2416	20.7307	20.7914	21.0069	21.1837	20.5992	20.7221	20.7312	20.6885	20.7376	20.7683	20.1972	20.1644	20.1163	20.1126	21.6911	21.9986	21.8806	22.0418	22.1049	22.4520	22.3015	22.3271	22.3674	22.4109	22.3691	22.3876	21.9958	21.9326	21.7628	21.7756	21.7569
41.6343	42.0430	42.7588	42.3734	42.4383	42.6115	42.7849	42.2465	42.3370	42.3499	42.3225	42.3837	42.3928	41.7527	41.7308	41.6482	41.6843	43.3060	43.5768	43.4977	43.5905	43.6666	43.9611	43.8594	43.9139	43.9399	43.9643	43.9319	43.9546	43.5891	43.5097	43.3883	43.3790	43.3451
27.2646	27.6941	28.4471	27.9654	28.0305	28.2276	28.3902	27.8416	27.9501	27.9551	27.9219	27.9724	28.0030	27.4462	27.4186	27.3606	27.3746	28.9195	29.2214	29.1260	29.2525	29.3175	29.6604	29.5266	29.5361	29.5734	29.6178	29.5647	29.5923	29.2131	29.1452	28.9986	29.0079	28.9763
2.6167	2.0958	1.2139	1.8537	1.7869	1.5219	1.3413	2.0026	1.8422	1.8491	1.9135	1.8352	1.8042	2.4120	2.4451	2.4793	2.4990	1.0362	0.6476	0.7963	0.5585	0.5081	0.0658	0.2812	0.2473	0.2033	0.1296	0.1622	0.1269	0.6053	0.6161	0.8044	0.7938	0.7865
0.9936	0.9968	1.0013	0.9956	0.9956	0.9979	0.9984	0.9948	0.9964	0.9959	0.9951	0.9960	0.9960	0.9944	0.9942	0.9948	0.9939	0.9925	0.9954	0.9939	0.9970	0.9966	1.0000	0.9972	0.9979	0.9978	0.9991	0.9993	0.9998	0.9957	0.9975	0.9968	0.9968	0.9974
0.00	-0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	-0.02	-0.02	-0.02	-0.03	-0.02	-0.02	-0.02	-0.02	-0.02	-0.01	-0.01	-0.01	-0.02	-0.01	-0.01		0.00	0.00	0.00	0.00
-0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.02	0.02	0.00	0.01	0.01	0.01	-0.09	-0.07	-0.08	-0.06	-0.06	-0.03	-0.03	-0.04	-0.03	-0.02	-0.02	-0.01		-0.01	-0.01	-0.01	0.00
-0.03	-0.02	-0.01	-0.02	-0.02	-0.01	-0.01	-0.04	-0.03	-0.03	-0.04	-0.04	-0.03	-0.07	-0.06	-0.05	-0.06	-0.08	-0.07	-0.07	-0.06	-0.05	-0.03	-0.04	-0.05	-0.04	-0.03	-0.03	-0.03		-0.03	-0.03	-0.03	-0.02
0.08	0.06	0.04	0.06	0.06	0.05	0.05	0.05	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.05	0.04	0.08	0.07	0.07	0.07	0.06	0.05	0.04	0.04	0.05	0.04	0.03	0.03		0.06	0.05	0.06	0.06
-0.01	-0.02	-0.03	-0.02	-0.03	-0.05	-0.04	-0.03	-0.03	-0.03	-0.02	-0.03	-0.03	0.01	0.00	0.01	0.00	-0.07	-0.07	-0.07	-0.07	-0.07	-0.06	-0.07	-0.09	-0.07	-0.07	-0.08	-0.08		-0.05	-0.07	-0.05	-0.05
-0.02	-0.01	-0.03	-0.07	-0.05	-0.04	-0.06	-0.03	-0.02	-0.03	-0.03	-0.03	-0.02	0.10	0.10	0.11	0.10	0.07	0.06	0.05	0.05	0.04	0.02	0.01	0.03	0.02	0.01	0.02	-0.01	-0.01	0.02	0.01	0.01	0.01
-0.02	-0.01	-0.02	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	0.00	0.00	-0.01	-0.01	0.00	-0.01	-0.01	-0.01	0.06	0.04	0.04	0.03	0.04	0.02	0.02	0.03	0.02	0.02	0.02	0.01	0.01	-0.01	-0.01	0.00	-0.01
-0.02	0.00	0.03	0.04	0.04	0.05	0.06	0.03	0.03	0.03	0.03	0.03	0.03	-0.07	-0.07	-0.09	-0.07	0.02	0.02	0.03	0.02	0.03	0.03	0.06	0.07	0.05	0.05	0.06	0.07	0.01	0.02	0.04	0.03	0.02
0.01	0.00	0.00	0.00	-0.01	-0.01	-0.01	0.00	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.03	0.05	0.02	0.03	0.03	0.02	0.02	0.01	0.02	0.01	0.01	-0.01	-0.01	0.00	0.00	-0.01
													0.103	0.105	0.105	0.101																	

98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
20.9346	20.8496	20.8706	21.1445	21.2269	21.3073	21.3613	21.5453	21.8584	21.5517	21.6170	21.6363	21.5965	21.6051	21.5809	21.2566	21.1486	21.0393	21.0388	21.0414	20.8754	20.8373	20.8449
25.4103	25.3324	25.3539	25.6015	25.6845	25.7516	25.7925	25.9631	26.2500	25.9787	26.0365	26.0466	26.0141	26.0191	25.9890	25.7016	25.5859	25.4890	25.4886	25.4891	25.3555	25.3199	25.3375
30.3167	30.2267	30.2562	30.4986	30.5784	30.6559	30.6928	30.8688	31.1631	30.8858	30.9444	30.9553	30.9274	30.9296	30.8949	30.6081	30.4922	30.4005	30.4024	30.3935	30.2815	30.2168	30.2353
39.6311	39.5446	39.5706	39.8021	39.8984	39.9808	40.0105	40.1936	40.5240	40.1948	40.2690	40.2984	40.2624	40.2696	40.2495	39.9246	39.8099	39.7249	39.7336	39.7256	39.5820	39.5369	39.5507
44.7757	44.6806	44.7134	44.9604	45.0421	45.1321	45.1614	45.3442	45.6655	45.3342	45.4226	45.4471	45.4112	45.4131	45.3894	45.0595	44.9499	44.8826	44.8726	44.8629	44.7237	44.6809	44.6942
36.1065	36.0201	36.0354	36.1619	36.2532	36.3359	36.3813	36.5742	36.9023	36.5835	36.6531	36.6777	36.6526	36.6626	36.6399	36.3236	36.2305	36.1371	36.1356	36.1371	36.0509	36.0052	36.0172
40.9689	40.8732	40.8954	41.0756	41.1623	41.2461	41.2873	41.4660	41.7980	41.4709	41.5355	41.5685	41.5404	41.5527	41.5244	41.2012	41.0950	41.0166	41.0210	41.0160	40.9071	40.8644	40.8776
48.7079	48.6032	48.6193	48.8198	48.9089	48.9943	49.0396	49.2031	49.5155	49.2114	49.2879	49.3078	49.2859	49.2938	49.2564	48.9384	48.8351	48.7736	48.7704	48.7656	48.6344	48.5950	48.6130
21.5527	21.4450	21.4570	21.6279	21.7497	21.8611	21.9411	22.1922	22.6315	22.2080	22.2843	22.3414	22.3259	22.3592	22.3516	21.9082	21.8021	21.6898	21.6956	21.7130	21.4761	21.4407	21.4479
0.7635	0.8467	0.8313	0.5860	0.4829	0.3955	0.3181	0.0862	-0.2860	0.0606	0.0074	-0.0246	0.0049	-0.0186	-0.0059	0.3709	0.4842	0.6296	0.6228	0.6047	0.8269	0.8605	0.8538
1.0012	1.0015	1.0013	1.0022	1.0026	1.0027	1.0036	1.0049	1.0061	1.0054	1.0049	1.0051	1.0051	1.0055	1.0058	1.0045	1.0043	1.0027	1.0029	1.0034	1.0011	1.0013	1.0011
0.0235	0.0271	0.0288	0.0772	0.0645	0.0593	0.0561	0.0363	0.0048	0.0282	0.0299	0.0213	0.0107	0.0043	0.0006	0.0227	0.0244	0.0254	0.0219	0.0185	0.0254	0.0255	0.0222
0.1046	0.1165	0.1179	0.1440	0.1338	0.1154	0.1032	0.0755	0.0230	0.0790	0.0710	0.0540	0.0507	0.0424	0.0344	0.0875	0.0810	0.0871	0.0845	0.0815	0.1105	0.1140	0.1199
0.1170	0.1180	0.1265	0.1519	0.1400	0.1327	0.1211	0.1049	0.0659	0.1125	0.1029	0.0875	0.0888	0.0796	0.0689	0.1141	0.1085	0.1117	0.1123	0.1028	0.1220	0.1174	0.1233
0.0427	0.0497	0.0529	0.0759	0.0840	0.0823	0.0723	0.0753	0.0834	0.0716	0.0730	0.0779	0.0711	0.0705	0.0779	0.0742	0.0666	0.0611	0.0703	0.0670	0.0528	0.0499	0.0492
-0.0065	-0.0067	0.0023	0.0457	0.0410	0.0473	0.0417	0.0509	0.0561	0.0386	0.0517	0.0527	0.0460	0.0421	0.0477	0.0321	0.0289	0.0328	0.0241	0.0220	0.0002	0.0007	-0.0015
0.0138	0.0200	0.0131	-0.0722	-0.0705	-0.0722	-0.0700	-0.0617	-0.0602	-0.0591	-0.0606	-0.0611	-0.0569	-0.0560	-0.0527	-0.0428	-0.0283	-0.0362	-0.0381	-0.0339	0.0178	0.0135	0.0117
-0.0179	-0.0197	-0.0206	-0.0477	-0.0488	-0.0490	-0.0463	-0.0461	-0.0349	-0.0455	-0.0543	-0.0455	-0.0445	-0.0394	-0.0398	-0.0434	-0.0427	-0.0437	-0.0386	-0.0382	-0.0207	-0.0208	-0.0224
-0.0695	-0.0783	-0.0868	-0.0864	-0.0823	-0.0803	-0.0662	-0.0714	-0.0706	-0.0833	-0.0841	-0.0670	-0.0597	-0.0561	-0.0628	-0.0716	-0.0691	-0.0658	-0.0670	-0.0620	-0.0848	-0.0799	-0.0783
-0.2076	-0.2266	-0.2341	-0.2884	-0.2614	-0.2354	-0.2120	-0.1637	-0.0674	-0.1620	-0.1495	-0.1200	-0.1062	-0.0875	-0.0742	-0.1728	-0.1693	-0.1724	-0.1694	-0.1576	-0.2232	-0.2203	-0.2241
0.208	0.227	0.234	0.288	0.261	0.235	0.212	0.164		0.162	0.150	0.120	0.106			0.173	0.169	0.172	0.169	0.158	0.223	0.220	0.224

Std deviation for row

0.023
0.038
0.035
0.022
0.033
0.074 looks high
0.020
0.033
0.074 looks high

0.3225 Max Diff
0.0817 std dev all data

98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
20.3575	20.2520	20.2752	20.4415	20.5429	20.6361	20.7094	20.9120	21.2839	20.9436	21.0171	21.0396	21.0273	21.0381	21.0188	20.6805	20.5470	20.4376	20.4471	20.4514	20.2884	20.2364	20.2603
26.4137	26.3091	26.3372	26.4744	26.5752	26.6674	26.7369	26.9395	27.3144	26.9800	27.0476	27.0816	27.0694	27.0854	27.0676	26.7145	26.6060	26.5068	26.5094	26.5163	26.3469	26.2979	26.3217
32.2537	32.1506	32.1724	32.3668	32.4581	32.5447	32.6087	32.7952	33.1344	32.8296	32.8919	32.9323	32.8985	32.9135	32.8943	32.5620	32.4407	32.3519	32.3566	32.3614	32.1943	32.1447	32.1631
34.3770	34.2835	34.2973	34.5365	34.6217	34.6895	34.7478	34.8959	35.1854	34.9247	34.9871	35.0093	34.9685	34.9780	34.9433	34.6559	34.5360	34.4557	34.4551	34.4491	34.3109	34.2624	34.2888
42.9312	42.8095	42.8344	43.0424	43.1191	43.2078	43.2553	43.3663	43.6479	43.4089	43.4903	43.5052	43.4701	43.4709	43.4254	43.1637	43.0265	42.9816	42.9811	42.9679	42.8502	42.8097	42.8423
36.1503	36.0589	36.0739	36.2825	36.3617	36.4253	36.4715	36.6234	36.9057	36.6460	36.7025	36.7376	36.6959	36.6994	36.6808	36.3629	36.2363	36.1569	36.1565	36.1633	36.0902	36.0484	36.0659
21.7129	21.6021	21.6295	21.8280	21.9255	22.0067	22.0655	22.2527	22.6044	22.2831	22.3463	22.3656	22.3514	22.3700	22.3276	21.9520	21.8440	21.7360	21.7459	21.7533	21.6326	21.5957	21.6169
43.2488	43.0975	43.1219	43.4405	43.5067	43.5849	43.6504	43.7523	44.0743	43.8665	43.9119	43.9375	43.9018	43.9202	43.8585	43.5500	43.4077	43.3519	43.3467	43.3611	43.2769	43.0549	43.1196
28.9284	28.8189	28.8379	29.0626	29.1461	29.2324	29.2939	29.4473	29.7812	29.4892	29.5561	29.5753	29.5447	29.5646	29.5256	29.1746	29.0471	28.9696	28.9759	28.9709	28.8550	28.8138	28.8376
0.8955	0.9739	0.9470	0.8673	0.7391	0.6415	0.5619	0.2705	-0.1696	0.2842	0.2088	0.1824	0.1721	0.1485	0.1501	0.6023	0.6834	0.8456	0.8250	0.8164	1.0198	0.9718	0.9761
0.9964	0.9974	0.9975	0.9935	0.9948	0.9953	0.9959	0.9999	1.0034	0.9982	0.9985	0.9985	0.9997	1.0001	1.0011	0.9972	0.9985	0.9960	0.9965	0.9967	0.9943	0.9979	0.9968
-0.02	-0.03	-0.03	-0.02	-0.03	-0.02	-0.01	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00	-0.01	-0.04	-0.03
-0.04	-0.04	-0.03	-0.08	-0.07	-0.07	-0.06	-0.04	-0.01	-0.03	-0.03	-0.03	-0.02	-0.01	0.00	-0.01	0.00	0.00	-0.01	0.00	-0.03	-0.04	-0.04
-0.07	-0.06	-0.06	-0.08	-0.07	-0.07	-0.06	-0.04	-0.02	-0.05	-0.05	-0.03	-0.04	-0.04	-0.02	-0.03	-0.03	-0.03	-0.03	-0.03	-0.07	-0.05	-0.06
0.05	0.07	0.06	0.08	0.08	0.07	0.07	0.06	0.03	0.05	0.04	0.04	0.03	0.03	0.03	0.06	0.07	0.06	0.06	0.05	0.04	0.06	0.06
-0.03	-0.03	-0.02	-0.07	-0.07	-0.06	-0.06	-0.07	-0.07	-0.09	-0.06	-0.08	-0.07	-0.08	-0.08	-0.06	-0.06	-0.05	-0.04	-0.06	-0.07	-0.01	-0.02
0.07	0.09	0.08	0.06	0.06	0.04	0.03	0.04	0.01	0.01	0.01	0.02	0.01	0.00	0.02	0.01	0.01	0.01	0.01	0.01	0.06	0.09	0.08
0.03	0.02	0.02	0.05	0.05	0.04	0.04	0.02	0.01	0.03	0.02	0.02	0.02	0.02	0.00	-0.01	-0.01	-0.01	0.00	0.00	0.03	0.02	0.02
-0.01	-0.04	-0.04	0.02	0.02	0.02	0.03	0.02	0.05	0.07	0.06	0.06	0.06	0.07	0.05	0.03	0.02	0.02	0.02	0.04	0.05	-0.07	-0.04
0.02	0.02	0.01	0.04	0.03	0.04	0.03	0.02	0.01	0.02	0.02	0.01	0.01	0.02	0.01	-0.01	-0.01	0.00	0.00	-0.01	0.01	0.02	0.02

Std deviation for row

0.010
0.026
0.027
0.024
0.026
0.059 looks high, right after change out TC 93. Looks like not temperature stable.
0.019
0.034
0.015

0.2102 Max Diff
0.0390 std dev all data

Calculation of regression values used to correct thermocouple readings for coldtrap experiment.

Conducted on April 15, 2004

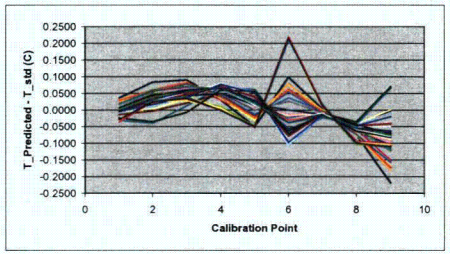
Thermocouple check

	Thermocouple no. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Thermometer reading oC																														
* 21.70	18.5059	19.0361	18.8956	19.4022	19.5043	20.2635	20.9384	20.0010	20.2129	20.3021	20.4130	20.6547	20.6600	19.9159	19.9935	20.0182	20.0557	20.0694	19.4210	19.4013	18.7499	18.8754	19.0568	19.3703	19.7936	19.6936	20.8931	20.0911	20.3117	20.3595
* 26.10	22.9651	23.4796	23.3329	23.8454	23.9499	24.6731	25.3215	24.4461	24.6439	24.7274	24.8481	25.0649	25.0748	24.3735	24.4413	24.4789	24.5038	24.5274	23.9056	23.8742	23.1918	23.3181	23.4985	23.8104	24.2195	24.1437	25.2776	24.5353	24.7330	24.7837
* 31.00	27.8848	28.4052	28.2766	28.7639	28.8511	29.5969	30.2640	29.3519	29.5729	29.6543	29.7526	29.9963	30.0002	29.2936	29.3785	29.3951	29.4303	29.4467	28.8288	28.8103	28.1269	28.2537	28.4312	28.7291	29.1411	29.0639	30.2004	29.4476	29.6566	29.7092
* 40.40	37.2511	37.7897	37.6503	38.1654	38.2585	39.0230	39.7006	38.7711	38.9991	39.0886	39.1997	39.4418	39.4396	38.7213	38.7922	38.8243	38.8548	38.8824	38.2456	38.2153	37.5044	37.6401	37.8164	38.1298	38.5543	38.4769	39.6556	38.8729	39.0848	39.1355
* 45.60	42.3852	42.9516	42.7966	43.3206	43.4103	44.2035	44.8849	43.9361	44.1806	44.2518	44.3651	44.6246	44.6168	43.8804	43.9542	43.9824	44.0131	44.0482	43.4126	43.3777	42.6596	42.7857	42.9635	43.2871	43.7241	43.6400	44.8467	44.0372	44.2591	44.3019
* 36.90	33.8097	34.3129	34.1835	34.6560	34.7338	35.4529	36.0659	35.1461	35.3556	35.4239	35.5385	35.7614	35.7575	35.1352	35.2051	35.2339	35.2556	35.2850	34.9370	34.9130	34.0388	34.1474	34.3181	34.6046	35.0032	34.8673	36.0277	35.2385	35.4376	35.4836
* 41.80	38.6274	39.1542	39.0185	39.5245	39.6015	40.3673	41.0075	40.0865	40.3129	40.3918	40.5031	40.7501	40.7464	40.0529	40.1249	40.1519	40.1808	40.2064	39.6512	39.6234	38.8701	38.9948	39.1643	39.4736	39.8919	39.7958	40.9844	40.1908	40.4042	40.4509
* 49.60	46.3714	46.9219	46.7646	47.2810	47.3511	48.1302	48.7721	47.8600	48.0925	48.1629	48.2782	48.5272	48.5169	47.8137	47.8888	47.9103	47.9476	47.9738	47.3724	47.3492	46.6203	46.7466	46.9124	47.2327	47.6569	47.5797	48.7494	47.9731	48.1729	48.2189
* 22.55	19.1025	19.7139	19.5515	20.1332	20.2442	21.1235	21.8845	20.7644	20.9902	21.1011	21.2276	21.5107	21.5086	20.6720	20.7589	20.7861	20.8255	20.8484	20.1988	20.1725	19.3889	19.5266	19.7293	20.0832	20.5807	20.4039	21.8371	20.8648	21.1156	21.1697
Intercept	3.2805	2.7328	2.8747	2.3372	2.2103	1.4208	0.6899	1.7164	1.5243	1.4113	1.2923	1.0471	1.0310	1.8290	1.7447	1.7152	1.6794	1.6700	2.3285	2.3489	3.0319	2.9006	2.6982	2.3718	1.9178	2.0676	0.7578	1.6365	1.4007	1.3441
Slope	0.9973	0.9976	0.9976	0.9984	0.9995	1.0001	1.0019	0.9995	0.9986	0.9995	0.9997	0.9997	1.0002	0.9978	0.9980	0.9981	0.9982	0.9978	0.9957	0.9959	0.9973	0.9974	0.9982	0.9986	0.9994	0.9979	1.0012	0.9989	0.9996	0.9998

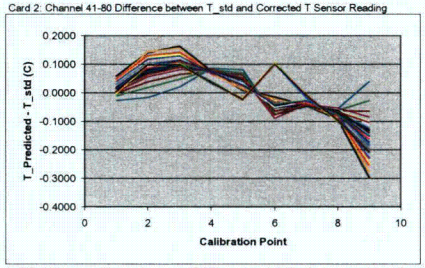
Difference between the corrected temperature reading and the standard thermometer reading. Corrected Temperature Reading (applied Slope and Offset to the above reading)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	0.0362	0.0225	0.0252	0.0081	0.0049	-0.0138	-0.0309	0.0067	0.0085	0.0029	-0.0019	-0.0053	-0.0056	0.0004	-0.0010	-0.0044	-0.0003	-0.0051	-0.0345	-0.0303	0.0307	0.0277	0.0208	0.0147	-0.0002	0.0200	-0.0248	0.0056	0.0036	-0.0004
	0.0834	0.0553	0.0519	0.0440	0.0483	-0.0038	-0.0393	0.0494	0.0332	0.0260	0.0317	0.0033	0.0099	0.0481	0.0380	0.0478	0.0399	0.0431	0.0307	0.0241	0.0605	0.0589	0.0545	0.0485	0.0231	0.0608	-0.0353	0.0449	0.0230	0.0229
	0.0897	0.0689	0.0839	0.0546	0.0471	0.0206	0.0129	0.0526	0.0552	0.0504	0.0344	0.0330	0.0361	0.0572	0.0655	0.0549	0.0577	0.0515	0.0327	0.0396	0.0822	0.0819	0.0784	0.0603	0.0418	0.0706	-0.0068	0.0518	0.0444	0.0475
	0.0307	0.0305	0.0352	0.0409	0.0497	0.0475	0.0678	0.0668	0.0680	0.0799	0.0783	0.0753	0.0771	0.0638	0.0608	0.0662	0.0656	0.0662	0.0088	0.0056	0.0341	0.0443	0.0466	0.0476	0.0494	0.0639	0.0594	0.0669	0.0685	0.0719
	-0.0492	-0.0201	-0.0307	-0.0122	-0.0010	0.0285	0.0622	0.0289	0.0422	0.0404	0.0418	0.0563	0.0551	0.0115	0.0127	0.0145	0.0147	0.0206	-0.0465	-0.0534	-0.0247	-0.0233	-0.0155	-0.0024	0.0161	0.0163	0.0565	0.0255	0.0405	0.0373
	0.0986	0.0621	0.0767	0.0372	0.0268	-0.0230	-0.0740	-0.0563	-0.0703	-0.0830	-0.0817	-0.1039	-0.1056	-0.0142	-0.0192	-0.0175	-0.0272	-0.0232	0.2145	0.2170	0.0779	0.0605	0.0546	0.0275	0.0004	-0.0381	-0.0727	-0.0636	-0.0771	-0.0793
	0.0032	-0.0083	0.0002	-0.0022	-0.0079	-0.0080	-0.0227	-0.0186	-0.0200	-0.0176	-0.0187	-0.0168	-0.0160	-0.0075	-0.0091	-0.0087	-0.0108	-0.0127	0.0083	0.0079	-0.0039	-0.0046	-0.0079	-0.0104	-0.0138	-0.0199	-0.0103	-0.0167	-0.0126	-0.0130
	-0.0738	-0.0596	-0.0721	-0.0582	-0.0622	-0.0444	-0.0430	-0.0492	-0.0515	-0.0505	-0.0464	-0.0424	-0.0441	-0.0640	-0.0605	-0.0650	-0.0577	-0.0625	-0.1039	-0.0983	-0.0748	-0.0726	-0.0736	-0.0623	-0.0533	-0.0523	-0.0363	-0.0429	-0.0473	-0.0464
	-0.2188	-0.1513	-0.1704	-0.1121	-0.1056	-0.0037	0.0671	-0.0804	-0.0653	-0.0485	-0.0376	0.0004	-0.0069	-0.0952	-0.0871	-0.0879	-0.0819	-0.0778	-0.1100	-0.1123	-0.1820	-0.1728	-0.1579	-0.1234	-0.0636	-0.1213	0.0702	-0.0716	-0.0429	-0.0404
List Maximum Diff (T_sensor- T_std) (only list if >0.1 C)	0.219	0.151	0.170	0.112	0.106							0.104	0.106						0.214	0.217	0.182	0.173	0.158	0.123		0.121				

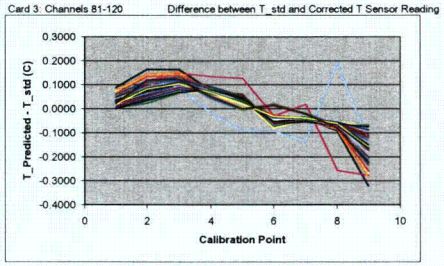
Card 1: Channel 1-40 Difference between T_std and Corrected T Sensor Reading



Card 2: Channel 41-80 Difference between T_std and Corrected T Sensor Reading



Card 3: Channels 81-120 Difference between T_std and Corrected T Sensor Reading



Removed Calibration Point at 36.85 C, it looked bad (taken after replaced TC #93)

APR 16

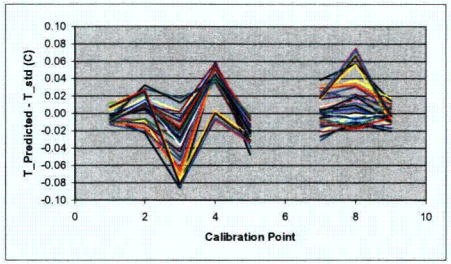
	Thermometer reading oC	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	21.20	17.8683	18.4385	18.2777	18.8156	18.9239	19.7336	20.4417	19.4276	19.6434	19.7419	19.8631	20.1227	20.1157	19.3406	19.4206	19.4503	19.4802	19.5020	18.8706	18.8477	18.1248	18.2584	18.4397	18.7684	19.2364	19.1067	20.3923	19.5259	19.7514	19.8091
	27.25	23.9732	24.5307	24.3860	24.9009	24.9909	25.7949	26.4793	25.4939	25.7104	25.7975	25.9142	26.1809	26.1738	25.4256	25.4986	25.5309	25.5588	25.5799	24.9639	24.9512	24.2274	24.3524	24.5225	24.8545	25.3076	25.1818	26.4454	25.5954	25.8132	25.8596
	33.10	29.8287	30.3681	30.2219	30.7375	30.8284	31.6087	32.2783	31.3228	31.5492	31.6269	31.7481	32.0010	31.9997	31.2465	31.3257	31.3426	31.3675	31.3977	30.7541	30.7334	30.0753	30.2049	30.3783	30.6901	31.1371	31.0250	32.2403	31.4231	31.6370	31.6943
	35.10	31.9929	32.4991	32.3617	32.8501	32.9325	33.6613	34.2848	33.3967	33.6130	33.6901	33.8014	34.0415	34.0333	33.3265	33.3951	33.4183	33.4433	33.4701	32.8379	32.8214	32.2139	32.3431	32.5062	32.8016	33.2180	33.1226	34.2572	33.4997	33.6977	33.7473
	43.70	40.5931	41.0809	40.9525	41.4063	41.4782	42.1838	42.7636	41.9336	42.1389	42.1969	42.3173	42.5442	42.5287	41.8883	41.9568	41.9697	41.9998	42.0215	41.4531	41.4394	40.8157	40.9300	41.0782	41.3648	41.7617	41.6851	42.7449	42.0300	42.2241	42.2611
Change TC93																															
	22.50	19.2291	19.7753	19.6294	20.1511	20.2534	21.0319	21.7031	20.7360	20.9398	21.0374	21.1396	21.4015	21.4075	20.6582	20.7283	20.7693	20.7881	20.8168	20.1841	20.1701	19.4819	19.6076	19.7876	20.1072	20.5448	20.4254	21.6651	20.8299	21.0443	21.0875
	44.00	41.0026	41.4433	41.3305	41.7785	41.8315	42.5346	43.0802	42.2626	42.4574	42.5129	42.6429	42.8743	42.8461	42.2260	42.2758	42.3114	42.3195	42.3572	41.8569	41.8233	41.1826	41.2982	41.4233	41.7147	42.1130	41.9913	43.0507	42.3539	42.5200	42.5589
	29.70	26.4891	27.0119	26.8834	27.3749	27.4661	28.2259	28.8636	27.9324	28.1491	28.2215	28.3486	28.5937	28.5790	27.8717	27.9413	27.9652	27.9875	28.0252	27.3950	27.3794	26.7288	26.8508	27.0218	27.3261	27.7512	27.6546	28.8284	28.0371	28.2445	28.2851
	Intercept	3.5345	2.8913	3.0689	2.4736	2.3318	1.4413	0.6157	1.7858	1.5595	1.4266	1.3226	1.0269	1.0095	1.9029	1.8116	1.7697	1.7380	1.7163	2.4474	2.4574	3.2302	3.0899	2.8706	2.5123	2.0060	2.1517	0.6771	1.6827	1.4211	1.3598
	Slope	0.9883	0.9927	0.9913	0.9947	0.9966	1.0010	1.0069	0.9990	0.9995	1.0013	1.0008	1.0023	1.0032	0.9973	0.9980	0.9985	0.9988	0.9986	0.9944	0.9946	0.9908	0.9914	0.9933	0.9951	0.9976	0.9964	1.0060	0.9992	1.0010	1.0015

Difference between the corrected temperature reading and the standard thermometer reading.
Use the slope and offset to compute the corrected temperature and compare to Standard Thermometer reading. DT=T_predicted - T_std (C)

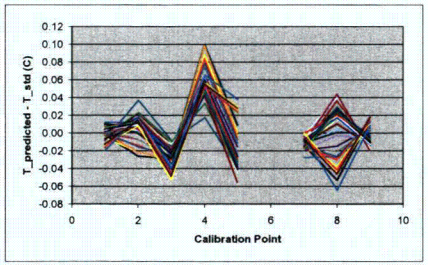
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	-0.01	-0.01	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.01	0.00	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	-0.01	-0.01	-0.01	0.00
-0.02	-0.01	-0.01	-0.01	-0.01	0.01	0.03	0.00	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0.02	0.03	-0.02	-0.02	-0.02	-0.01	0.00	-0.01	0.03	0.01	0.01	0.01
-0.09	-0.06	-0.07	-0.05	-0.04	-0.02	0.02	-0.02	-0.01	-0.01	0.00	0.00	0.01	-0.04	-0.03	-0.03	-0.03	-0.03	-0.07	-0.07	-0.07	-0.07	-0.05	-0.05	-0.03	-0.03	0.01	-0.02	-0.01	0.00
0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.05	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.00	0.00	0.05	0.05	0.06	0.05	0.05	0.06	0.04	0.05	0.05	0.06
-0.05	-0.03	-0.04	-0.04	-0.03	-0.03	-0.02	-0.02	-0.02	-0.02	-0.03	-0.03	-0.03	-0.02	-0.02	-0.02	-0.01	-0.02	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.01	-0.02	-0.02	-0.01	-0.02
0.04	0.02	0.03	0.02	0.02	-0.01	-0.03	0.00	-0.01	-0.01	-0.02	-0.02	-0.01	0.01	0.00	0.01	0.00	0.00	0.02	0.02	0.03	0.03	0.03	0.02	0.00	0.00	-0.03	-0.01	-0.01	-0.02
0.06	0.03	0.04	0.03	0.02	0.02	-0.01	0.01	-0.01	-0.01	0.00	0.00	-0.01	0.01	0.00	0.02	0.01	0.01	0.07	0.06	0.03	0.03	0.02	0.02	0.02	-0.01	-0.01	0.00	-0.02	-0.02
0.01	0.00	0.02	0.00	0.00	0.00	-0.02	-0.01	-0.01	-0.02	-0.01	-0.01	-0.02	0.00	0.00	-0.01	-0.01	0.00	-0.01	-0.01	0.01	0.01	0.01	0.00	-0.01	0.01	-0.02	0.00	-0.01	-0.01

List Maximum Diff (T_sensor- T_std) (only list if >0.1 C)

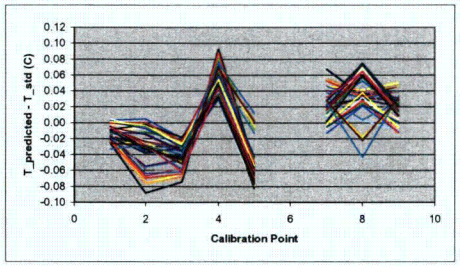
Card 1: Channel 1-40 Difference between T_std and Corrected T Sensor Reading



Card 2: Channel 41-80 Difference between T_std and Corrected T Sensor Reading



Card 3: Channels 81-120 Difference between T_std and Corrected T Sensor Reading



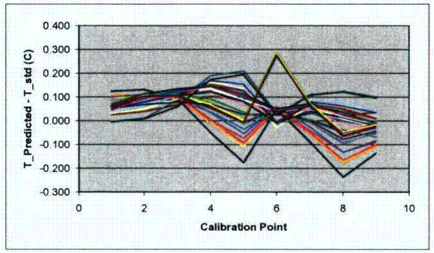
April 16 calibration data
Result: All of the predicted temperatures (calibrated TC) match the standard thermometer within 0.1 C, as expected.

Check April 15 reading using April 16 calibration (that is use Slope + Offset from Apr 16 calibration to predict April 15 data

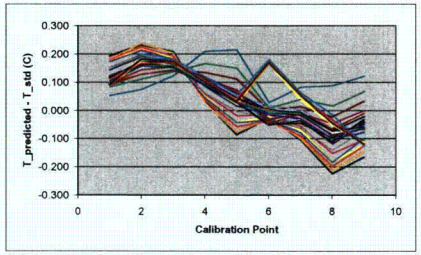
Thermocouple no.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
0.124	0.087	0.099	0.074	0.070	0.025	-0.001	0.067	0.062	0.055	0.052	0.030	0.035	0.065	0.065	0.058	0.069	0.057	0.059	0.055	0.108	0.103	0.100	0.087	0.053	0.075	-0.003	0.057	0.053	0.050
0.131	0.098	0.098	0.093	0.101	0.039	0.012	0.108	0.091	0.085	0.090	0.050	0.064	0.110	0.104	0.112	0.112	0.108	0.118	0.104	0.109	0.107	0.112	0.105	0.068	0.109	0.008	0.097	0.079	0.081
0.093	0.088	0.098	0.086	0.085	0.068	0.089	0.108	0.117	0.119	0.099	0.093	0.105	0.117	0.131	0.121	0.132	0.121	0.114	0.113	0.098	0.100	0.112	0.099	0.079	0.112	0.060	0.105	0.108	0.114
-0.050	0.003	-0.010	0.038	0.061	0.103	0.191	0.118	0.138	0.165	0.153	0.160	0.175	0.119	0.126	0.136	0.145	0.143	0.077	0.068	-0.010	0.006	0.034	0.053	0.069	0.091	0.172	0.123	0.146	0.154
-0.176	-0.073	-0.108	-0.034	-0.005	0.089	0.211	0.078	0.117	0.135	0.123	0.155	0.169	0.064	0.078	0.086	0.097	0.101	0.015	0.003	-0.103	-0.093	-0.053	-0.015	0.027	0.036	0.195	0.083	0.125	0.128
0.049	0.052	0.054	0.047	0.048	0.030	0.031	-0.003	-0.003	-0.004	-0.011	-0.029	-0.019	0.043	0.046	0.051	0.050	0.050	0.287	0.283	0.056	0.043	0.059	0.046	0.027	-0.005	0.023	-0.009	-0.005	-0.003
-0.090	-0.042	-0.053	-0.010	-0.001	0.049	0.107	0.032	0.051	0.070	0.058	0.072	0.086	0.047	0.056	0.061	0.069	0.065	0.075	0.069	-0.057	-0.051	-0.027	-0.009	0.004	0.006	0.109	0.039	0.066	0.071
-0.237	-0.132	-0.175	-0.094	-0.078	0.020	0.125	-0.002	0.027	0.051	0.039	0.067	0.081	-0.013	0.005	0.008	0.027	0.021	-0.048	-0.047	-0.178	-0.166	-0.131	-0.089	-0.049	-0.038	0.121	0.015	0.043	0.051
-0.137	-0.090	-0.100	-0.049	-0.043	0.036	0.102	-0.021	-0.011	0.005	0.017	0.038	0.037	-0.031	-0.021	-0.025	-0.012	-0.015	-0.018	-0.028	-0.109	-0.102	-0.082	-0.054	-0.012	-0.067	0.096	-0.020	0.008	0.011

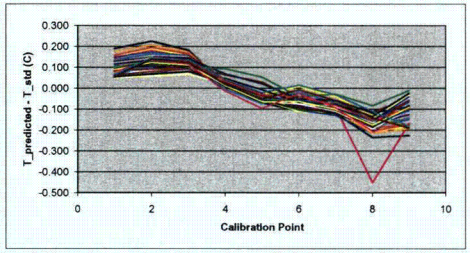
Card 1: Channel 1-40 Difference between T_std and Corrected T Sensor Reading



Card 2: Channel 41-80 Difference between T_std and Corrected T Sensor Reading



Card 3: Channels 81-120 Difference between T_std and Corrected T Sensor Reading



With the exception of 1 data point on sensor 82, all T reading are with 0.25 C.

31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
20.5371	19.9787	19.9771	20.0147	20.0752	20.1012	19.4678	19.4406	19.4121	19.4059	18.4874	19.0327	18.8908	19.3784	19.4897	20.2431	21.0001	20.0196	20.2219	20.3701	20.4719	20.0417	20.0391	20.0381	20.0344	20.0622	20.0769	19.4687	19.4031	19.4030	18.6630	18.8691	19.0539
24.9569	24.4322	24.4237	24.4584	24.5266	24.5492	23.9438	23.9213	23.8864	23.8756	22.9759	23.5124	23.3752	23.8566	23.9584	24.6763	25.4044	24.4929	24.6827	24.8283	24.9299	24.5256	24.5233	24.5211	24.5124	24.5448	24.5626	23.9801	23.9223	23.9154	23.1641	23.3545	23.5336
29.8759	29.3607	29.3520	29.3836	29.4583	29.4920	28.8664	28.8511	28.8227	28.8069	27.9064	28.4311	28.2840	28.7653	28.8665	29.5959	30.3338	29.4140	29.6044	29.7404	29.8408	29.4394	29.4348	29.4407	29.4269	29.4684	29.4774	28.8951	28.8354	28.8251	28.0842	28.2705	28.4474
39.3131	38.7857	38.7846	38.8139	38.9031	38.9339	38.2847	38.2615	38.2228	38.2084	37.2343	37.7771	37.6269	38.1194	38.2320	38.9921	39.7844	38.7779	38.9855	39.1266	39.2171	38.8161	38.8104	38.8192	38.8010	38.8481	38.8494	38.2649	38.2091	38.2011	37.4069	37.6071	37.7949
44.4864	43.9544	43.9450	43.9770	44.0721	44.1089	43.4435	43.4301	43.3963	43.3790	42.3737	42.9438	42.7804	43.2906	43.3958	44.1723	44.9698	43.9497	44.1529	44.2937	44.3894	43.9699	43.9621	43.9981	43.9587	44.0134	44.0052	43.4266	43.3645	43.3609	42.5550	42.7636	42.9537
35.6407	35.1835	35.1821	35.2106	35.2860	35.3181	34.9771	34.9643	34.9212	34.9134	33.6368	34.1733	34.0243	34.5103	34.6134	35.3579	36.1169	35.1228	35.3269	35.4624	35.5655	35.1889	35.1886	35.2038	35.1973	35.2330	35.2324	34.8218	34.7621	34.7571	33.8115	33.9995	34.1824
40.6216	40.1122	40.1122	40.1329	40.2249	40.2561	39.6956	39.6767	39.6463	39.6274	38.5138	39.0729	38.9193	39.4054	39.5149	40.2724	41.0526	40.0567	40.2532	40.3999	40.4994	40.1076	40.0943	40.1190	40.0996	40.1462	40.1407	39.6242	39.5631	39.5560	38.6929	38.8924	39.0821
48.3866	47.8758	47.8815	47.9086	48.0134	48.0436	47.4188	47.4077	47.3670	47.3450	46.2793	46.8434	46.6732	47.1776	47.2674	48.0404	48.8276	47.8322	48.0254	48.1819	48.2659	47.8726	47.8583	47.8866	47.8578	47.9146	47.9054	47.3725	47.2972	47.3108	46.4621	46.6613	46.8481
21.3713	20.7521	20.7483	20.7907	20.8481	20.8882	20.2501	20.2291	20.1793	20.1776	18.9838	19.6117	19.4485	20.0228	20.1554	21.0297	21.9152	20.7010	20.9391	21.0991	21.2202	20.7236	20.7111	20.7255	20.7096	20.7490	20.7638	20.1226	20.0564	20.0421	19.1891	19.4186	19.6375
1.1539	1.7596	1.7690	1.7217	1.6947	1.6660	2.2796	2.3103	2.3465	2.3414	3.2988	2.7304	2.8633	2.3415	2.2125	1.4241	0.6400	1.6938	1.4736	1.3235	1.1977	1.6779	1.6780	1.6977	1.6872	1.6730	1.6360	2.2982	2.3570	2.3751	3.1041	2.8928	2.6954
1.0002	0.9979	0.9977	0.9982	0.9966	0.9966	0.9959	0.9955	0.9955	0.9961	0.9985	0.9989	0.9995	1.0002	1.0008	1.0015	1.0016	1.0001	1.0006	1.0008	1.0015	0.9995	0.9998	0.9987	0.9996	0.9987	0.9997	0.9966	0.9967	0.9963	0.9989	0.9992	0.9995
-0.0039	-0.0030	0.0010	0.0007	0.0026	-0.0018	-0.0324	-0.0361	-0.0282	-0.0289	0.0584	0.0421	0.0448	0.0232	0.0183	-0.0025	-0.0270	0.0160	0.0086	0.0094	0.0013	0.0105	0.0121	0.0104	0.0128	0.0094	0.0070	0.0005	-0.0040	0.0060	0.0466	0.0475	0.0400
0.0169	0.0413	0.0376	0.0365	0.0391	0.0310	0.0253	0.0246	0.0262	0.0232	0.1402	0.1169	0.1270	0.1022	0.0907	0.0374	-0.0158	0.0899	0.0723	0.0711	0.0662	0.0924	0.0952	0.0877	0.0887	0.0863	0.0915	0.0965	0.1002	0.1017	0.1428	0.1294	0.1175
0.0372	0.0595	0.0548	0.0529	0.0543	0.0568	0.0277	0.0324	0.0404	0.0351	0.1632	0.1301	0.1334	0.1117	0.1029	0.0643	0.0214	0.1116	0.0972	0.0870	0.0846	0.1039	0.1055	0.1011	0.1011	0.1036	0.1048	0.0947	0.0971	0.0931	0.1575	0.1417	0.1289
0.0767	0.0650	0.0662	0.0665	0.0674	0.0663	0.0075	0.0006	-0.0016	-0.0003	0.0771	0.0657	0.0718	0.0674	0.0761	0.0747	0.0868	0.0768	0.0843	0.0805	0.0755	0.0764	0.0789	0.0677	0.0711	0.0712	0.0741	0.0324	0.0398	0.0343	0.0700	0.0711	0.0718
0.0513	0.0230	0.0149	0.0203	0.0191	0.0235	-0.0549	-0.0539	-0.0512	-0.0500	0.0088	0.0267	0.0227	0.0394	0.0442	0.0626	0.0803	0.0492	0.0551	0.0517	0.0557	0.0279	0.0293	0.0400	0.0265	0.0298	0.0284	-0.0235	-0.0218	-0.0251	0.0125	0.0237	0.0282
-0.0966	-0.0297	-0.0282	-0.0304	-0.0375	-0.0371	0.2134	0.2181	0.2116	0.2176	-0.0150	-0.0341	-0.0291	-0.0423	-0.0455	-0.0651	-0.0864	-0.0789	-0.0766	-0.0865	-0.0818	-0.0492	-0.0421	-0.0432	-0.0310	-0.0393	-0.0419	0.1011	0.1042	0.1030	-0.0215	-0.0337	-0.0389
-0.0145	-0.0112	-0.0093	-0.0169	-0.0152	-0.0160	0.0125	0.0095	0.0155	0.0131	-0.0453	-0.0399	-0.0365	-0.0464	-0.0400	-0.0432	-0.0430	-0.0443	-0.0472	-0.0451	-0.0403	-0.0327	-0.0376	-0.0342	-0.0308	-0.0324	-0.0350	-0.0128	-0.0106	-0.0159	-0.0454	-0.0445	-0.0415
-0.0475	-0.0637	-0.0575	-0.0550	-0.0527	-0.0553	-0.0959	-0.0941	-0.0983	-0.0996	-0.0915	-0.0780	-0.0864	-0.0728	-0.0811	-0.0635	-0.0558	-0.0678	-0.0699	-0.0571	-0.0618	-0.0713	-0.0755	-0.0764	-0.0761	-0.0740	-0.0726	-0.0910	-0.1021	-0.0899	-0.0847	-0.0816	-0.0793
-0.0195	-0.0812	-0.0795	-0.0746	-0.0770	-0.0675	-0.1033	-0.1011	-0.1144	-0.1102	-0.2960	-0.2296	-0.2477	-0.1823	-0.1655	-0.0647	0.0396	-0.1525	-0.1238	-0.1110	-0.0993	-0.1579	-0.1660	-0.1531	-0.1623	-0.1547	-0.1563	-0.1979	-0.2028	-0.2072	-0.2778	-0.2535	-0.2267
						0.213	0.218	0.212	0.218	0.296	0.230	0.248	0.182	0.165			0.153	0.124	0.111		0.158	0.166	0.153	0.162	0.155	0.156	0.198	0.203	0.207	0.278	0.253	0.227

31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
19.9875	19.4041	19.4024	19.4401	19.5054	19.5348	18.9167	18.9011	18.8588	18.8509	17.7840	18.3536	18.2059	18.7316	18.8422	19.6383	20.4419	19.4044	19.6176	19.7661	19.8785	19.4315	19.4219	19.4389	19.4226	19.4551	19.4780	18.8626	18.7992	18.7849	17.9715	18.1786	18.3742
26.0378	25.4833	25.4861	25.5155	25.5871	25.6205	25.0187	25.0063	24.9602	24.9543	23.8778	24.4491	24.2913	24.8142	24.9242	25.7226	26.5128	25.4746	25.6872	25.8310	25.9501	25.5189	25.5052	25.5258	25.5082	25.5477	25.5610	24.9770	24.9065	24.9001	24.0657	24.2769	24.4636
31.8565	31.2998	31.2963	31.3459	31.4161	31.4412	30.7962	30.7822	30.7391	30.7309	29.7908	30.3299	30.1822	30.6749	30.7832	31.5405	32.2946	31.3272	31.5219	31.6716	31.7827	31.3503	31.3413	31.3553	31.3392	31.3799	31.3935	30.7862	30.7292	30.7205	29.9694	30.1687	30.3572
33.9084	33.3759	33.3822	33.4168	33.4835	33.5201	32.8778	32.8667	32.8308	32.8253	31.9433	32.4557	32.3200	32.7755	32.8792	33.6004	34.3134	33.4169	33.5987	33.7477	33.8392	33.4465	33.4373	33.4555	33.4380	33.4735	33.4741	32.9011	32.8325	32.8379	32.1214	32.3037	32.4804
42.4221	41.9203	41.9431	41.9667	42.0565	42.0853	41.5043	41.4907	41.4578	41.4445	40.5479	41.0401	40.9063	41.3328	41.4415	42.1285	42.8239	41.9594	42.1379	42.2939	42.3637	41.9895	41.9768	42.0211	41.9809	42.0401	42.0256	41.5044	41.4378	41.4538	40.7106	40.8968	41.0711
21.2701	20.7200	20.7117	20.7413	20.8097	20.8474	20.2305	20.2215	20.1806	20.1691	19.0866	19.6478	19.5133	20.0095	20.1301	20.9355	21.7314	20.6910	20.8908	21.0591	21.1598	20.7200	20.7134	20.7259	20.7078	20.7554	20.7709	20.1832	20.1180	20.1011	19.2721	19.4796	19.6703
42.7267	42.2514	42.2515	42.2556	42.3458	42.3879	41.9025	41.9017	41.8647	41.8431	40.7888	41.3205	41.1696	41.6189	41.7439	42.4711	43.1914	42.3222	42.5052	42.6799	42.7535	42.3423	42.3115	42.3745	42.3023	42.3955	42.3757	41.7375	41.6735	41.6857	40.9758	41.1763	41.3555
28.4524	27.9151	27.9250	27.9547	28.0320	28.0619	27.4489	27.4346	27.3996	27.3906	26.3976	26.9358	26.8018	27.2766	27.3917	28.1381	28.9021	27.9216	28.1156	28.2711	28.3711	27.9536	27.9407	27.9647	27.9459	27.9807	27.9937	27.4311	27.3677	27.3609	26.5764	26.7805	26.9647
1.1655	1.8099	1.8260	1.7719	1.7259	1.6967	2.3983	2.4172	2.4660	2.4655	3.6116	3.0008	3.1452	2.5633	2.4523	1.5662	0.6724	1.8920	1.6578	1.5154	1.3653	1.8537	1.8502	1.8737	1.8482	1.8500	1.7941	2.4019	2.4663	2.5081	3.4169	3.1962	2.9920
1.0023	0.9988	0.9981	0.9989	0.9980	0.9979	0.9944	0.9942	0.9938	0.9942	0.9889	0.9915	0.9914	0.9950	0.9949	0.9994	1.0038	0.9955	0.9968	0.9964	0.9981	0.9957	0.9963	0.9946	0.9964	0.9947	0.9964	0.9956	0.9956	0.9943	0.9894	0.9902	0.9910
0.00	-0.01	-0.01	-0.01	-0.01	-0.01	0.01	0.01	0.01	0.01	0.00	0.00	-0.01	0.00	0.00	-0.01	-0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	-0.02	-0.02	-0.01	0.00	0.00	0.00
0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.03	0.02	0.02	-0.03	-0.01	-0.02	0.00	0.00	0.02	0.04	0.00	0.01	0.00	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.02	-0.02	-0.01	-0.02
-0.01	-0.03	-0.04	-0.02	-0.02	-0.03	-0.08	-0.08	-0.08	-0.08	-0.03	-0.03	-0.03	-0.02	-0.02	-0.01	-0.01	-0.02	-0.02	-0.03	-0.01	-0.03	-0.02	-0.04	-0.03	-0.04	-0.03	-0.05	-0.04	-0.05	-0.03	-0.03	-0.03
0.05	0.04	0.05	0.05	0.04	0.04	-0.01	-0.01	-0.01	0.00	0.10	0.08	0.09	0.07	0.07	0.05	0.02	0.06	0.05	0.04	0.04	0.06	0.06	0.05	0.06	0.05	0.05	0.06	0.05	0.06	0.10	0.08	0.08
-0.02	-0.02	-0.01	-0.01	0.00	-0.01	-0.03	-0.03	-0.03	-0.03	0.01	-0.01	0.00	-0.01	-0.02	-0.03	-0.04	-0.04	-0.04	-0.04	-0.05	-0.04	-0.03	-0.03	-0.02	-0.03	-0.03	0.02	0.02	0.02	0.00	-0.01	-0.01
-0.02	0.00	0.00	-0.01	-0.01	0.00	0.02	0.02	0.02	0.02	-0.01	-0.02	-0.01	-0.03	-0.02	-0.01	-0.01	-0.01	-0.02	0.00	-0.02	-0.01	-0.01	-0.01	-0.02	0.00	-0.01	0.00	0.00	-0.01	-0.01	-0.01	-0.02
-0.01	0.01	0.00	-0.02	-0.01	-0.01	0.07	0.07	0.07	0.07	-0.05	-0.03	-0.04	-0.03	-0.01	0.01	0.03	0.02	0.03	0.04	0.04	0.02	0.00	0.02	0.00	0.02	0.02	-0.04	-0.04	-0.04	-0.04	-0.03	-0.03
-0.02	-0.01	0.00	0.00	0.00	0.00	-0.01	-0.01	0.00	0.00	0.02	0.01	0.02	0.00	0.01	-0.01	-0.01	-0.01	-0.02	-0.02	-0.02	-0.01	-0.01	-0.01	-0.01	-0.02	-0.01	0.01	0.01	0.01	0.01	0.01	0.01

31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
0.050	0.064	0.065	0.065	0.060	0.055	0.057	0.044	0.058	0.059	0.193	0.172	0.174	0.144	0.143	0.096	0.053	0.121	0.115	0.111	0.098	0.110	0.115	0.104	0.110	0.107	0.099	0.085	0.084	0.100	0.183	0.181	0.174
0.079	0.112	0.104	0.104	0.103	0.093	0.108	0.099	0.105	0.103	0.232	0.214	0.220	0.200	0.189	0.127	0.074	0.173	0.161	0.153	0.148	0.175	0.183	0.163	0.172	0.166	0.168	0.177	0.184	0.187	0.236	0.222	0.213
0.110	0.134	0.123	0.124	0.124	0.125	0.104	0.100	0.111	0.105	0.208	0.191	0.187	0.184	0.173	0.143	0.122	0.172	0.167	0.147	0.149	0.168	0.176	0.157	0.168	0.163	0.165	0.170	0.175	0.168	0.204	0.190	0.182
0.169	0.148	0.138	0.144	0.150	0.147	0.069	0.055	0.053	0.052	0.032	0.058	0.049	0.091	0.091	0.134	0.209	0.094	0.118	0.099	0.107	0.105	0.117	0.085	0.108	0.094	0.104	0.098	0.108	0.091	0.028	0.036	0.045
0.154	0.110	0.088	0.101	0.109	0.111	-0.001	-0.006	-0.005	-0.007	-0.086	-0.020	-0.041	0.037	0.029	0.110	0.215	0.042	0.068	0.048	0.070	0.037	0.049	0.036	0.047	0.032	0.041	0.037	0.040	0.021	-0.078	-0.058	-0.043
-0.012	0.050	0.042	0.045	0.040	0.039	0.280	0.277	0.272	0.276	-0.026	-0.016	-0.022	0.000	-0.009	0.002	0.028	-0.045	-0.029	-0.051	-0.037	-0.007	0.008	-0.011	0.018	-0.002	0.000	0.171	0.176	0.166	-0.029	-0.037	-0.035
0.080	0.073	0.063	0.061	0.069	0.066	0.072	0.062	0.068	0.063	-0.103	-0.058	-0.069	-0.029	-0.033	0.013	0.082	-0.034	-0.019	-0.032	-0.013	-0.009	-0.004	-0.022	0.002	-0.015	-0.010	0.052	0.056	0.038	-0.099	-0.092	-0.079
0.063	0.027	0.017	0.029	0.042	0.037	-0.048	-0.052	-0.059	-0.064	-0.224	-0.153	-0.182	-0.096	-0.119	-0.024	0.087	-0.093	-0.072	-0.078	-0.061	-0.077	-0.069	-0.096	-0.068	-0.087	-0.073	-0.034	-0.044	-0.052	-0.212	-0.199	-0.184
0.036	-0.014	-0.015	-0.010	-0.018	-0.010	-0.015	-0.022	-0.029	-0.024	-0.166	-0.104	-0.123	-0.084	-0.044	0.033	0.122	-0.051	-0.021	-0.012	-0.005	-0.061	-0.066	-0.062	-0.067	-0.060	-0.067	-0.114	-0.115	-0.114	-0.147	-0.125	-0.098

64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
19.3605	19.7906	20.5441	20.0551	20.1196	20.3169	20.4811	19.9132	20.0404	20.0432	19.9957	20.0451	20.0798	19.4794	19.4514	19.4074	19.4081	21.0085	21.2945	21.1886	21.3413	21.3922	21.7161	21.5797	21.6037	21.6325	21.6676	21.6209	21.6281	21.3078	21.2366	21.0572	21.0553	21.0610
23.8335	24.2471	24.9669	24.5246	24.5844	24.7763	24.9313	24.4031	24.5206	24.5237	24.4756	24.5224	24.5511	23.9912	23.9676	23.9223	23.9198	25.4750	25.7485	25.6434	25.7786	25.8265	26.1248	26.0022	26.0259	26.0543	26.0754	26.0344	26.0371	25.7471	25.6864	25.5106	25.5056	25.5052
28.7392	29.1614	29.8881	29.4377	29.4995	29.6967	29.8530	29.3226	29.4289	29.4348	29.4042	29.4452	29.4654	28.9132	28.8851	28.8403	28.8376	30.3645	30.6447	30.5389	30.6849	30.7372	31.0385	30.9136	30.9307	30.9766	30.9916	30.9513	30.9481	30.6559	30.5820	30.4124	30.4182	30.4120
38.0944	38.5450	39.3062	38.8156	38.8840	39.0821	39.2444	38.6886	38.8089	38.8140	38.7796	38.8206	38.8459	38.2794	38.2625	38.2174	38.2135	39.6586	39.9636	39.8529	39.9885	40.0550	40.3948	40.2602	40.2588	40.3190	40.3401	40.2886	40.3056	39.9825	39.9074	39.7434	39.7482	39.7489
43.2634	43.7090	44.4848	43.9844	44.0486	44.2440	44.4174	43.8470	43.9647	43.9716	43.9409	43.9744	44.0013	43.4388	43.4220	43.3764	43.3719	44.8133	45.1194	45.0076	45.1436	45.2156	45.5586	45.4059	45.3877	45.4759	45.4951	45.4435	45.4627	45.1279	45.0510	44.8892	44.8962	44.8866
34.4791	34.9171	35.6529	35.1609	35.2251	35.4242	35.5801	35.0696	35.1851	35.1865	35.1669	35.2071	35.2286	34.8326	34.8099	34.7641	34.7629	36.0129	36.3261	36.2048	36.3554	36.4254	36.7687	36.6238	36.6218	36.6967	36.7314	36.6803	36.7019	36.3918	36.3142	36.1526	36.1577	36.1504
39.3767	39.8224	40.5794	40.0897	40.1656	40.3602	40.5241	39.9823	40.0999	40.1089	40.0721	40.1201	40.1431	39.6296	39.6112	39.5656	39.5732	40.9360	41.2389	41.1283	41.2629	41.3249	41.6699	41.5207	41.5058	41.5920	41.6176	41.5669	41.5885	41.2696	41.2019	41.0351	41.0477	41.0409
47.1505	47.5886	48.3475	47.8756	47.9274	48.1233	48.3076	47.7525	47.8635	47.8702	47.8455	47.8746	47.9021	47.3714	47.3656	47.3208	47.3144	48.6739	48.7092	48.8795	49.0021	49.0756	49.4169	49.2761	49.2349	49.3422	49.3754	49.3149	49.3421	49.4271	48.9473	48.7840	48.8014	48.7865
19.9899	20.4990	21.3761	20.7503	20.8246	21.0620	21.2429	20.5771	20.7236	20.7246	20.6732	20.7362	20.7656	20.1299	20.0974	20.0460	20.0508	21.4466	21.8333	21.7008	21.9105	21.9885	22.4283	22.2446	22.2671	22.3287	22.3890	22.3496	22.3946	21.9499	21.8786	21.7090	21.7194	21.7128
2.3644	1.9074	1.1108	1.6577	1.5862	1.3645	1.2088	1.8175	1.6762	1.6779	1.7414	1.6718	1.6390	2.2822	2.3268	2.3748	2.3699	0.7377	0.2817	0.5359	0.3303	0.2836	-0.0789	0.0697	-0.0067	0.0093	-0.0396	-0.0116	-0.0212	0.5555	0.4174	0.6035	0.6121	0.6033
1.0003	1.0007	1.0017	1.0001	1.0003	1.0009	1.0006	0.9991	0.9998	0.9996	0.9987	0.9995	0.9997	0.9968	0.9961	0.9960	0.9962	1.0020	1.0072	1.0022	1.0039	1.0034	1.0039	1.0038	1.0060	1.0037	1.0042	1.0048	1.0046	0.9961	1.0035	1.0030	1.0026	1.0030
0.0304	0.0115	-0.0110	0.0153	0.0122	0.0004	0.0026	0.0132	0.0118	0.0125	0.0121	0.0075	0.0132	-0.0013	0.0016	0.0045	0.0037	0.0885	0.0294	0.0711	0.0544	0.0483	0.0230	0.0316	0.0260	0.0208	0.0191	0.0127	0.0054	0.0807	0.0284	0.0237	0.0212	0.0267
0.1046	0.0711	0.0192	0.0853	0.0784	0.0640	0.0555	0.0992	0.0910	0.0911	0.0863	0.0826	0.0832	0.0960	0.1001	0.1013	0.0981	0.1640	0.1154	0.1357	0.1090	0.0976	0.0490	0.0710	0.0746	0.0588	0.0455	0.0474	0.0345	0.1028	0.0937	0.0904	0.0830	0.0841
0.1117	0.0886	0.0485	0.0990	0.0951	0.0890	0.0803	0.1143	0.0981	0.1001	0.1088	0.1031	0.0961	0.1021	0.0983	0.0996	0.0971	0.1634	0.1469	0.1419	0.1344	0.1249	0.0821	0.1011	0.1087	0.0990	0.0823	0.0878	0.0678	0.0925	0.1065	0.1069	0.1081	0.1054
0.0695	0.0787	0.0823	0.0781	0.0825	0.0832	0.0776	0.0721	0.0759	0.0753	0.0724	0.0740	0.0741	0.0380	0.0388	0.0391	0.0371	0.0762	0.1328	0.0764	0.0741	0.0742	0.0753	0.0833	0.0925	0.0756	0.0701	0.0698	0.0680	-0.0170	0.0645	0.0657	0.0620	0.0700
0.0401	0.0462	0.0695	0.0475	0.0487	0.0499	0.0537	0.0259	0.0305	0.0307	0.0273	0.0255	0.0280	-0.0192	-0.0220	-0.0226	-0.0243	0.0413	0.1256	0.0425	0.0492	0.0523	0.0594	0.0486	0.0520	0.0513	0.0468	0.0494	0.0486	-0.0916	0.0261	0.0270	0.0231	0.0228
-0.0467	-0.0517	-0.0771	-0.0772	-0.0776	-0.0781	-0.0891	-0.0438	-0.0471	-0.0506	-0.0358	-0.0378	-0.0422	0.1025	0.0997	0.0997	0.0997	-0.0768	-0.0308	-0.0797	-0.0731	-0.0677	-0.0651	-0.0669	-0.0663	-0.0600	-0.0537	-0.0558	-0.0522	-0.0938	-0.0413	-0.0357	-0.0377	-0.0393
-0.0478	-0.0430	-0.0424	-0.0477	-0.0355	-0.0375	-0.0419	-0.0354	-0.0334	-0.0303	-0.0367	-0.0270	-0.0291	-0.0161	-0.0178	-0.0181	-0.0084	-0.0438	0.0172	-0.0453	-0.0466	-0.0515	-0.0446	-0.0514	-0.0531	-0.0468	-0.0471	-0.0458	-0.0433	-0.1349	-0.0365	-0.0387	-0.0352	-0.0343
-0.0718	-0.0716	-0.0614	-0.0608	-0.0712	-0.0671	-0.0536	-0.0720	-0.0716	-0.0724	-0.0730	-0.0762	-0.0722	-0.0993	-0.0939	-0.0940	-0.0968	-0.0903	-0.2587	-0.0771	-0.0773	-0.0746	-0.0670	-0.0664	-0.0778	-0.0683	-0.0566	-0.0606	-0.0544	0.1910	-0.0640	-0.0666	-0.0617	-0.0657
-0.1901	-0.1296	-0.0275	-0.1395	-0.1326	-0.1038	-0.0852	-0.1735	-0.1551	-0.1564	-0.1613	-0.1518	-0.1512	-0.2028	-0.2048	-0.2095	-0.2061	-0.3225	-0.2779	-0.2656	-0.2241	-0.2034	-0.1121	-0.1509	-0.1567	-0.1304	-0.1065	-0.1050	-0.0746	-0.1297	-0.1774	-0.1726	-0.1629	-0.1696
0.190	0.130		0.139	0.133	0.104		0.173	0.155	0.156	0.161	0.152	0.151	0.203	0.205	0.209	0.206	0.322	0.278	0.266	0.224	0.203	0.112	0.151	0.157	0.130	0.106	0.105		0.191	0.177	0.173	0.163	0.170

TC 93 replaced after initial calibration

64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
18.7074	19.1603	19.9575	19.4427	19.5108	19.7221	19.8987	19.3006	19.4321	19.4336	19.3842	19.4494	19.4744	18.8787	18.8456	18.7969	18.7999	20.2884	20.6259	20.5101	20.6828	20.7394	21.1169	20.9686	20.9876	21.0290	21.0740	21.0448	21.0684		20.6346	20.4679	20.4729	20.4698
24.7869	25.2434	26.0278	25.5125	25.5849	25.8019	25.9694	25.3899	25.5128	25.5159	25.4698	25.5318	25.5657	24.9769	24.9573	24.9088	24.9079	26.3173	26.6539	26.5352	26.7107	26.7741	27.1529	27.0117	27.0211	27.0807	27.1231	27.0896	27.1228		26.6937	26.5295	26.5376	26.5369
30.6551	31.0829	31.8392	31.3631	31.4359	31.6301	31.7985	31.2221	31.3377	31.3464	31.2962	31.3549	31.3877	30.7933	30.7740	30.7268	30.7255	32.2217	32.5382	32.4301	32.5826	32.6503	33.0019	32.8755	32.8773	32.9289	32.9679	32.9299	32.9537		32.5302	32.3740	32.3837	32.3771
32.7722	33.1721	33.8801	33.4501	33.5171	33.7003	33.8639	33.3239	33.4366	33.4457	33.4120	33.4498	33.4757	32.9122	32.8818	32.8407	32.8403	34.4038	34.6840	34.5853	34.7140	34.7742	35.0821	34.9620	34.9652	35.0192	35.0385	34.9911	35.0122		34.6337	34.4667	34.4816	34.4625
41.3434	41.7148	42.3975	42.0061	42.0693	42.2190	42.3847	41.8882	41.9748	41.9961	41.9707	42.0063	42.0305	41.5254	41.4951	41.4497	41.4574	42.9193	43.1833	43.0952	43.2020	43.2698	43.5795	43.4688	43.4576	43.5216	43.5407	43.4900	43.5034		43.1375	42.9765	42.9997	42.9785
19.9950	20.4598	21.2416	20.7307	20.7914	21.0069	21.1837	20.5992	20.7221	20.7312	20.6885	20.7376	20.7683	20.1972	20.1644	20.1163	20.1126	21.6911	21.9986	21.8806	22.0416	22.1049	22.4520	22.3015	22.3271	22.3674	22.4109	22.3691	22.3876	21.9958	21.9326	21.7628	21.7756	21.7569
41.6343	42.0430	42.7588	42.3734	42.4383	42.6115	42.7849	42.2465	42.3370	42.3499	42.3225	42.3637	42.3928	41.7527	41.7308	41.6482	41.6843	43.3060	43.5768	43.4977	43.5905	43.6666	43.9611	43.8994	43.9139	43.9399	43.9643	43.9319	43.9546	43.5891	43.5097	43.3883	43.3790	43.3451
27.2646	27.6941	28.4471	27.9654	28.0305	28.2276	28.3902	27.8416	27.9501	27.9551	27.9219	27.9724	28.0030	27.4462	27.4186	27.3606	27.3746	28.9195	29.2214	29.1260	29.2525	29.3175	29.6604	29.5266	29.5361	29.5734	29.6178	29.5647	29.5923	29.2131	29.1452	28.9986	29.0079	28.9763
2.6193	2.0973	1.2178	1.8632	1.7948	1.5276	1.3507	2.0072	1.8447	1.8534	1.9186	1.8394	1.8070	2.3964	2.4292	2.4634	2.4839	1.0255	0.6379	0.7881	0.5496	0.5008	0.0626	0.2795	0.2427	0.1993	0.1282	0.1596	0.1280	0.6082	0.6123	0.8034	0.7928	0.7843
0.9934	0.9967	1.0010	0.9951	0.9951	0.9976	0.9978	0.9945	0.9962	0.9957	0.9948	0.9958	0.9959	0.9954	0.9952	0.9958	0.9949	0.9931	0.9959	0.9944	0.9975	0.9970	1.0002	0.9973	0.9981	0.9980	0.9992	0.9995	0.9997	0.9955	0.9978	0.9966	0.9967	0.9975
0.00	-0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	-0.02	-0.02	-0.01	-0.03	-0.02	-0.02	-0.02	-0.02	-0.02	-0.01	-0.01	-0.01	-0.02	-0.01	-0.01		0.00	0.00	0.00	0.00
-0.01	0.01	0.02	0.00	0.00	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.02	0.01	-0.09	-0.07	-0.08	-0.06	-0.05	-0.03	-0.03	-0.04	-0.02	-0.02	-0.02	-0.01		0.00	-0.01	-0.01	0.00
-0.03	-0.02	-0.01	-0.03	-0.02	-0.02	-0.02	-0.04	-0.04	-0.04	-0.05	-0.04	-0.03	-0.05	-0.05	-0.04	-0.05	-0.07	-0.06	-0.06	-0.05	-0.05	-0.03	-0.04	-0.04	-0.04	-0.03	-0.03	-0.03		-0.03	-0.03	-0.03	-0.02
0.08	0.06	0.03	0.05	0.05	0.05	0.04	0.05	0.06	0.05	0.06	0.05	0.04	0.06	0.05	0.07	0.06	0.09	0.08	0.08	0.08	0.07	0.05	0.05	0.04	0.05	0.04	0.03	0.03		0.07	0.05	0.06	0.06
-0.01	-0.03	-0.04	-0.04	-0.04	-0.06	-0.06	-0.03	-0.04	-0.03	-0.03	-0.03	-0.04	0.03	0.02	0.04	0.03	-0.05	-0.06	-0.06	-0.05	-0.06	-0.05	-0.07	-0.08	-0.07	-0.07	-0.07	-0.08		-0.05	-0.06	-0.05	-0.04
-0.02	-0.01	-0.02	-0.01	-0.02	-0.02	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	-0.01	0.00	0.00	-0.01	-0.01	0.07	0.05	0.05	0.04	0.04	0.02	0.02	0.03	0.02	0.02	0.02	0.01	0.01	0.00	-0.01	0.00	-0.01
-0.02	0.00	0.02	0.03	0.03	0.04	0.04	0.02	0.02	0.02	0.02	0.02	0.02	-0.04	-0.04	-0.06	-0.05	0.03	0.04	0.04	0.03	0.04	0.03	0.06	0.07	0.05	0.06	0.07	0.07	0.00	0.02	0.05	0.03	0.02
0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.02	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	0.02	0.02	0.01	0.02	0.05	0.04	0.05	0.03	0.03	0.03	0.03	0.02	0.01	0.02	0.01	0.01	-0.01	-0.01	0.00	0.00	-0.01

64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
0.152	0.122	0.083	0.119	0.116	0.095	0.088	0.112	0.110	0.110	0.110	0.099	0.104	0.086	0.087	0.089	0.092	0.189	0.145	0.158	0.138	0.129	0.082	0.100	0.106	0.089	0.078	0.069	0.050	0.121	0.101	0.090	0.078	0.093
0.196	0.164	0.111	0.167	0.159	0.144	0.128	0.177	0.173	0.171	0.167	0.158	0.157	0.177	0.181	0.185	0.181	0.225	0.181	0.187	0.165	0.151	0.092	0.110	0.120	0.102	0.082	0.080	0.058	0.141	0.141	0.129	0.114	0.126
0.169	0.162	0.137	0.155	0.150	0.153	0.139	0.170	0.163	0.161	0.169	0.160	0.151	0.176	0.175	0.182	0.173	0.181	0.157	0.155	0.159	0.147	0.106	0.108	0.116	0.115	0.094	0.094	0.068	0.127	0.126	0.114	0.110	0.120
0.063	0.114	0.165	0.087	0.089	0.115	0.111	0.085	0.108	0.099	0.096	0.095	0.092	0.099	0.107	0.119	0.101	0.011	0.038	0.017	0.039	0.037	0.064	0.029	0.026	0.039	0.035	0.026	0.023	0.012	0.030	0.013	0.010	0.034
-0.002	0.061	0.149	0.030	0.029	0.065	0.073	0.015	0.044	0.035	0.030	0.027	0.027	0.034	0.041	0.056	0.033	-0.070	-0.028	-0.057	-0.018	-0.018	0.029	-0.039	-0.055	-0.015	-0.015	-0.021	-0.022	-0.065	-0.038	-0.058	-0.059	-0.041
-0.029	-0.002	0.008	-0.050	-0.052	-0.034	-0.046	-0.015	-0.002	-0.012	0.002	-0.003	-0.010	0.168	0.171	0.181	0.168	-0.109	-0.085	-0.111	-0.085	-0.082	-0.063	-0.097	-0.104	-0.076	-0.071	-0.080	-0.080	-0.062	-0.055	-0.065	-0.069	-0.056
-0.064	-0.012	0.040	-0.045	-0.035	-0.009	-0.012	-0.029	-0.006	-0.011	-0.018	-0.011	-0.016	0.043	0.049	0.062	0.054	-0.120	-0.092	-0.115	-0.089	-0.097	-0.061	-0.114	-0.129	-0.091	-0.089	-0.096	-0.095	-0.106	-0.078	-0.099	-0.095	-0.077
-0.141	-0.072	0.016	-0.098	-0.111	-0.065	-0.046	-0.101	-0.071	-0.084	-0.085	-0.089	-0.089	-0.052	-0.034	-0.016	-0.045	-0.236	-0.453	-0.207	-0.169	-0.170	-0.112	-0.180	-0.215	-0.156	-0.137	-0.152	-0.143	0.215	-0.150	-0.176	-0.167	-0.151
-0.073	-0.022	0.066	-0.039	-0.032	-0.011	-0.002	-0.078	-0.060	-0.062	-0.066	-0.062	-0.063	-0.117	-0.120	-0.125	-0.118	-0.225	-0.168	-0.183	-0.144	-0.126	-0.055	-0.087	-0.082	-0.066	-0.051	-0.053	-0.033	-0.090	-0.108	-0.110	-0.110	-0.107

98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
20.9346	20.8496	20.8706	21.1445	21.2269	21.3073	21.3613	21.5453	21.8584	21.5517	21.6170	21.6363	21.5965	21.6051	21.5809	21.2566	21.1486	21.0393	21.0388	21.0414	20.8754	20.8373	20.8449
25.4103	25.3324	25.3539	25.6015	25.6845	25.7516	25.7925	25.9631	26.2500	25.9787	26.0365	26.0466	26.0141	26.0191	25.9890	25.7016	25.5859	25.4890	25.4886	25.4891	25.3555	25.3199	25.3375
30.3167	30.2267	30.2562	30.4986	30.5784	30.6559	30.6928	30.8686	31.1631	30.8858	30.9444	30.9553	30.9274	30.9296	30.8949	30.6061	30.4922	30.4005	30.4024	30.3935	30.2615	30.2168	30.2353
39.6311	39.5446	39.5706	39.8021	39.8984	39.9808	40.0105	40.1936	40.5240	40.1948	40.2690	40.2984	40.2624	40.2696	40.2495	39.9246	39.8099	39.7249	39.7336	39.7256	39.5820	39.5369	39.5507
44.7757	44.6806	44.7134	44.9604	45.0421	45.1321	45.1614	45.3442	45.6655	45.3342	45.4226	45.4471	45.4112	45.4131	45.3894	45.0595	44.9499	44.8826	44.8726	44.8629	44.7237	44.6809	44.6942
36.1065	36.0201	36.0354	36.1619	36.2532	36.3359	36.3813	36.5742	36.9023	36.5835	36.6531	36.6777	36.6526	36.6628	36.6399	36.3236	36.2305	36.1371	36.1356	36.1371	36.0509	36.0052	36.0172
40.9689	40.8732	40.8954	41.0756	41.1623	41.2461	41.2873	41.4660	41.7980	41.4709	41.5355	41.5685	41.5404	41.5527	41.5244	41.2012	41.0950	41.0166	41.0210	41.0160	40.9071	40.8644	40.8776
48.7079	48.6032	48.6193	48.8198	48.9089	48.9943	49.0396	49.2031	49.5155	49.2114	49.2879	49.3078	49.2859	49.2938	49.2564	48.9384	48.8351	48.7736	48.7704	48.7656	48.6344	48.5950	48.6130
21.5527	21.4450	21.4570	21.6279	21.7497	21.8611	21.9411	22.1922	22.6315	22.2080	22.2843	22.3414	22.3259	22.3592	22.3516	21.9082	21.8021	21.6898	21.6956	21.7130	21.4761	21.4407	21.4479
0.7635	0.8467	0.8313	0.5860	0.4829	0.3955	0.3181	0.0862	-0.2860	0.0606	0.0074	-0.0246	0.0049	-0.0186	-0.0059	0.3709	0.4842	0.6296	0.6228	0.6047	0.8269	0.8605	0.8538
1.0012	1.0015	1.0013	1.0022	1.0026	1.0027	1.0036	1.0049	1.0061	1.0054	1.0049	1.0051	1.0051	1.0055	1.0058	1.0045	1.0043	1.0027	1.0029	1.0034	1.0011	1.0013	1.0011
0.0235	0.0271	0.0288	0.0772	0.0645	0.0593	0.0561	0.0363	0.0048	0.0282	0.0299	0.0213	0.0107	0.0043	0.0006	0.0227	0.0244	0.0254	0.0219	0.0185	0.0254	0.0255	0.0222
0.1046	0.1165	0.1179	0.1440	0.1336	0.1154	0.1032	0.0755	0.0230	0.0790	0.0710	0.0540	0.0507	0.0424	0.0344	0.0875	0.0810	0.0871	0.0845	0.0815	0.1105	0.1140	0.1199
0.1170	0.1180	0.1265	0.1519	0.1400	0.1327	0.1211	0.1049	0.0659	0.1125	0.1029	0.0875	0.0888	0.0796	0.0689	0.1141	0.1085	0.1117	0.1123	0.1028	0.1220	0.1174	0.1233
0.0427	0.0497	0.0529	0.0759	0.0840	0.0823	0.0723	0.0753	0.0834	0.0716	0.0730	0.0779	0.0711	0.0705	0.0779	0.0742	0.0666	0.0611	0.0703	0.0670	0.0528	0.0499	0.0492
-0.0065	-0.0067	0.0023	0.0457	0.0410	0.0473	0.0417	0.0509	0.0561	0.0386	0.0517	0.0527	0.0460	0.0421	0.0477	0.0321	0.0289	0.0328	0.0241	0.0220	0.0002	0.0007	-0.0015
0.0138	0.0200	0.0131	-0.0722	-0.0705	-0.0722	-0.0700	-0.0617	-0.0602	-0.0591	-0.0606	-0.0611	-0.0569	-0.0560	-0.0527	-0.0428	-0.0283	-0.0362	-0.0381	-0.0339	0.0178	0.0135	0.0117
-0.0179	-0.0197	-0.0206	-0.0477	-0.0488	-0.0490	-0.0463	-0.0461	-0.0349	-0.0455	-0.0543	-0.0455	-0.0445	-0.0394	-0.0398	-0.0434	-0.0427	-0.0437	-0.0386	-0.0382	-0.0207	-0.0208	-0.0224
-0.0695	-0.0783	-0.0868	-0.0864	-0.0823	-0.0803	-0.0662	-0.0714	-0.0706	-0.0633	-0.0641	-0.0670	-0.0597	-0.0561	-0.0628	-0.0716	-0.0691	-0.0658	-0.0670	-0.0620	-0.0848	-0.0799	-0.0783
-0.2076	-0.2266	-0.2341	-0.2884	-0.2614	-0.2354	-0.2120	-0.1637	-0.0674	-0.1620	-0.1495	-0.1200	-0.1062	-0.0875	-0.0742	-0.1728	-0.1693	-0.1724	-0.1694	-0.1576	-0.2232	-0.2203	-0.2241
0.208	0.227	0.234	0.288	0.261	0.235	0.212	0.164		0.162	0.150	0.120	0.106			0.173	0.169	0.172	0.169	0.158	0.223	0.220	0.224

Std deviation for row	
0.023	
0.038	
0.035	
0.022	
0.033	
0.074	looks high
0.020	
0.033	
0.074	looks high
0.3225	Max Diff
0.0817	std dev all data

98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
20.3575	20.2520	20.2752	20.4415	20.5429	20.6361	20.7094	20.9120	21.2839	20.9436	21.0171	21.0396	21.0273	21.0381	21.0188	20.6605	20.5470	20.4376	20.4471	20.4514	20.2884	20.2364	20.2603
26.4137	26.3091	26.3372	26.4744	26.5752	26.6674	26.7369	26.9395	27.3144	26.9800	27.0476	27.0816	27.0694	27.0854	27.0676	26.7145	26.6060	26.5068	26.5094	26.5163	26.3469	26.2979	26.3217
32.2537	32.1506	32.1724	32.3668	32.4581	32.5447	32.6087	32.7952	33.1344	32.8296	32.8919	32.9323	32.8985	32.9135	32.8943	32.5620	32.4407	32.3519	32.3566	32.3614	32.1943	32.1447	32.1631
34.3770	34.2835	34.2973	34.5365	34.6217	34.6895	34.7478	34.8959	35.1854	34.9247	34.9871	35.0093	34.9685	34.9780	34.9433	34.6559	34.5360	34.4557	34.4551	34.4491	34.3109	34.2624	34.2888
42.9312	42.8095	42.8344	43.0424	43.1191	43.2078	43.2553	43.3663	43.6479	43.4089	43.4903	43.5052	43.4701	43.4709	43.4254	43.1637	43.0265	42.9816	42.9811	42.9679	42.8502	42.8097	42.8423
21.7129	21.6021	21.6295	21.8280	21.9255	22.0067	22.0655	22.2527	22.6044	22.2831	22.3463	22.3656	22.3514	22.3700	22.3276	21.9520	21.8440	21.7360	21.7459	21.7533	21.6326	21.5957	21.6169
43.2488	43.0975	43.1219	43.4405	43.5067	43.5849	43.6504	43.7523	44.0743	43.8665	43.9119	43.9375	43.9018	43.9202	43.8585	43.5500	43.4077	43.3519	43.3467	43.3611	43.2769	43.0549	43.1196
28.9284	28.8189	28.8379	29.0626	29.1461	29.2324	29.2939	29.4473	29.7812	29.4892	29.5561	29.5753	29.5447	29.5646	29.5256	29.1746	29.0471	28.9696	28.9759	28.9709	28.8550	28.8136	28.8376
0.8848	0.9594	0.9336	0.8571	0.7292	0.6343	0.5565	0.2636	-0.1715	0.2819	0.2076	0.1797	0.1707	0.1483	0.1469	0.6003	0.6811	0.8446	0.8241	0.8146	1.0110	0.9565	0.9634
0.9970	0.9982	0.9983	0.9940	0.9953	0.9957	0.9962	1.0003	1.0035	0.9983	0.9986	0.9987	0.9998	1.0001	1.0012	0.9973	0.9986	0.9960	0.9966	0.9968	0.9948	0.9987	0.9976
-0.02	-0.03	-0.03	-0.02	-0.02	-0.02	-0.01	-0.02	-0.01	-0.01	0.00	-0.01	-0.01	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00	-0.01	-0.03	-0.03
-0.03	-0.03	-0.02	-0.08	-0.07	-0.06	-0.06	-0.04	-0.01	-0.03	-0.03	-0.02	-0.01	-0.01	0.00	-0.01	0.00	0.00	-0.01	0.00	-0.03	-0.03	-0.03
-0.06	-0.05	-0.05	-0.07	-0.06	-0.06	-0.06	-0.03	-0.02	-0.04	-0.05	-0.03	-0.04	-0.04	-0.02	-0.03	-0.02	-0.03	-0.03	-0.03	-0.06	-0.04	-0.05
0.06	0.08	0.07	0.09	0.09	0.07	0.07	0.07	0.04	0.05	0.05	0.04	0.03	0.03	0.03	0.06	0.07	0.06	0.06	0.05	0.04	0.08	0.07
-0.01	-0.01	0.00	-0.06	-0.05	-0.05	-0.05	-0.06	-0.07	-0.08	-0.06	-0.07	-0.07	-0.08	-0.07	-0.05	-0.05	-0.04	-0.04	-0.05	-0.06	0.01	0.00
0.03	0.02	0.03	0.05	0.05	0.05	0.04	0.02	0.01	0.03	0.02	0.02	0.02	0.02	0.00	-0.01	-0.01	-0.01	0.00	0.00	0.03	0.02	0.03
0.00	-0.02	-0.02	0.04	0.03	0.03	0.04	0.03	0.06	0.07	0.06	0.06	0.06	0.07	0.06	0.03	0.03	0.02	0.02	0.04	0.06	-0.04	-0.02
0.03	0.03	0.02	0.05	0.04	0.04	0.04	0.02	0.01	0.02	0.02	0.02	0.01	0.02	0.01	0.00	-0.01	0.00	0.00	-0.01	0.02	0.03	0.03

Std deviation for row	
0.009	
0.025	
0.021	
0.020	
0.025	
	looks high, right after change out TC 93. Looks like not temperature stable.
0.020	
0.033	
0.017	
0.0000	Max Diff
0.0341	std dev all data

98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
0.057	0.072	0.069	0.175	0.157	0.149	0.136	0.116	0.063	0.097	0.094	0.088	0.063	0.055	0.054	0.099	0.100	0.100	0.091	0.089	0.078	0.067	0.057
0.119	0.146	0.144	0.206	0.194	0.174	0.150	0.135	0.070	0.117	0.107	0.092	0.080	0.070	0.068	0.132	0.131	0.132	0.125	0.123	0.135	0.144	0.139
0.110	0.132	0.138	0.174	0.164	0.157	0.132	0.142	0.100	0.115	0.108	0.094	0.092	0.081	0.080	0.123	0.130	0.124	0.122	0.111	0.116	0.135	0.125
-0.003	0.033	0.037	0.022	0.041	0.042	0.014	0.070	0.094	0.009	0.020	0.025	0.026	0.021	0.046	0.016	0.035	0.011	0.021	0.014	-0.012	0.043	0.018
-0.074	-0.040	-0.029	-0.051	-0.040	-0.029	-0.055	0.022	0.053	-0.061	-0.034	-0.033	-0.027	-0.035	-0.008	-0.063	-0.032	-0.051	-0.057	-0.065	-0.097	-0.020	-0.051
-0.017	0.015	0.008	-0.097	-0.087	-0.087	-0.102	-0.051	-0.041	-0.096	-0.091	-0.091	-0.083	-0.086	-0.068	-0.075	-0.039	-0.062	-0.064	-0.063	-0.025	0.016	-0.007
-0.069	-0.041	-0.041	-0.113	-0.101	-0.098	-0.114	-0.057	-0.028	-0.117	-0.115	-0.106	-0.097	-0.095	-0.078	-0.110	-0.082	-0.102	-0.096	-0.100	-0.094	-0.031	-0.059
-0.154	-0.125	-0.130	-0.215	-0.191	-0.184	-0.192	-0.118	-0.083	-0.190	-0.174	-0.177	-0.153	-0.154	-0.138	-0.194	-0.153	-0.176	-0.173	-0.175	-0.206	-0.110	-0.142
-0.177	-0.184	-0.196	-0.194	-0.173	-0.149	-0.136	-0.087	-0.011	-0.098	-0.089	-0.058	-0.058	-0.040	-0.024	-0.101	-0.097	-0.102	-0.105	-0.091	-0.174	-0.180	-0.191