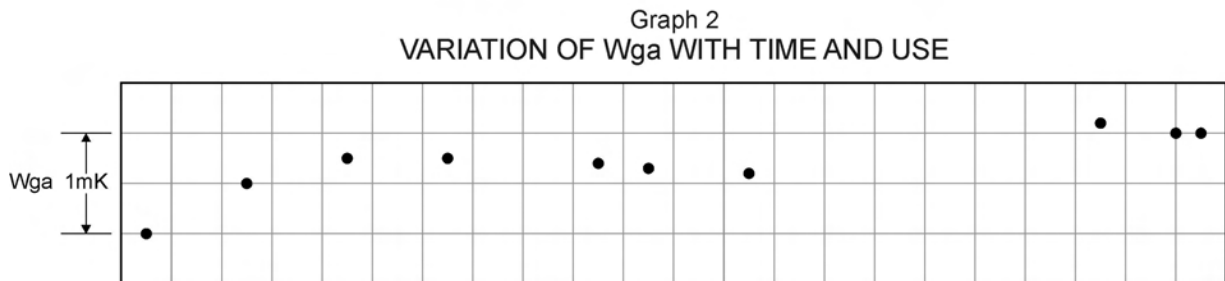
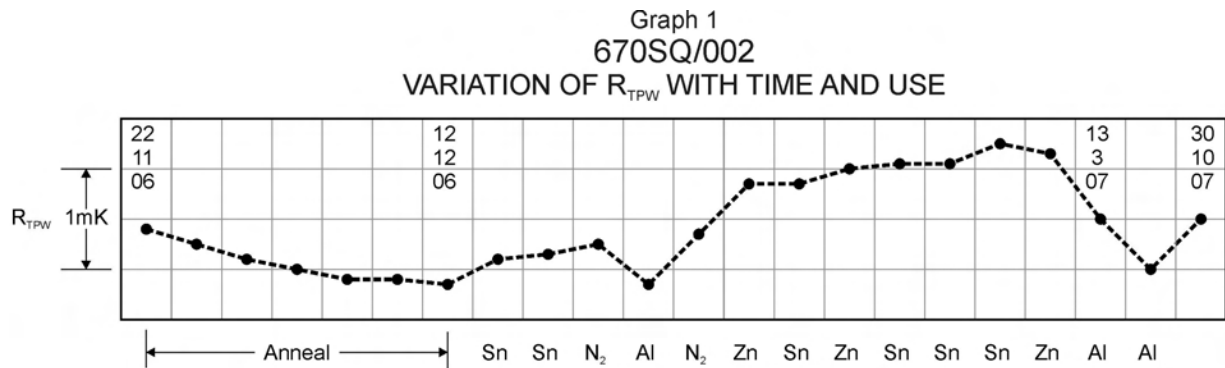


## EXPERIENCES WITH OUR SPRT'S DURING 2007

### The 670SQ/25.5Ω Primary Standard PRT

This product – New for 2007 – is a unique evolution in SPRT thermometry.

The attached control chart for a continuously used 670SQ thermometer show the performance if used carefully without shock or vibration.



### **909Q/25.5Ω Working Standard PRT**

The construction of the measuring element of the 909 was revised during 2007; this enabled the spacing between turns of the platinum winding to be doubled. In turn this improved the stability and vertical shock resistance of the product.

### **Metal Cladding**

Metal clad SPRT's are not more robust than the quartz sheathed SPRT's. They just look more robust. In consequence they are handled with less care, and so more are damaged. Remember the measuring elements in the metal clad versions are identical to those in the quartz sheathed SPRT's!

### **Aspirated 96178A/0.25Ω Primary HTSPRT**

Still unique – the 96178A is the only HTSPRT where the gas inside can be refreshed.

The table below shows the max and min readings taken from five 96178 aspirated HTSPRT's during their UKAS calibrations.

The table was checked by UKAS who reduced our uncertainties based on these results.

026AA      027      029      036      038      Mean       $\sigma\sqrt{14}$   
(mK)

Ag

<b>Min</b>	-1.73	-0.96	-0.84	-0.913	-0.09	<b>-0.9</b>	<b>-0.24</b>
<b>Max</b>	+0.94	+1.02	+1.09	+2.0	+0.09	<b>+1.0</b>	<b>+0.27</b>

Al

<b>Min</b>	-0.31	-0.35	-1.0	-0.23	-0.22	<b>0.42</b>	<b>-0.11</b>
<b>Max</b>	+0.24	+0.26	+0.61	+0.41	+0.22	<b>0.35</b>	<b>+0.1</b>

Zn

<b>Min</b>	-0.33	-0.15	-0.1	-0.25	-0.34	<b>0.23</b>	<b>-0.06</b>
<b>Max</b>	+0.22	+0.11	+0.16	+0.16	+0.31	<b>0.2</b>	<b>+0.05</b>

Sn

<b>Min</b>	-0.09	-0.13	-0.07	-0.27	-0.13	<b>0.14</b>	<b>-0.04</b>
<b>Max</b>	+0.17	+0.07	+0.12	+0.17	+0.13	<b>0.13</b>	<b>+0.04</b>

Ga

<b>Min</b>	-0.025	-0.15	-0.009	-0.134	-0.134	<b>-0.063</b>	<b>0.02</b>
<b>Max</b>	+0.025	+0.15	+0.009	+0.134	+0.134	<b>+0.063</b>	<b>0.02</b>

H<sub>2</sub>O

<b>Min</b>	-0.55	-0.43	-0.36	-0.24	-0.16	<b>-0.348</b>	<b>-0.09</b>
<b>Max</b>	+1.0	+0.30	+0.48	+0.35	+0.24	<b>+0.47</b>	<b>+0.13</b>

The tables show the max and minimum values of W at each fixed point including shifts in water triple point during the complete calibration procedure.

The mean values are 1mK or less even at the silver point. As far as I know no HTSPRT comes close to this performance. There were at least 3 readings at silver and aluminium with 2 or more at the other points and a min of 10 readings at TPW.