Temperature dependence of the signals from PbW04 crystals

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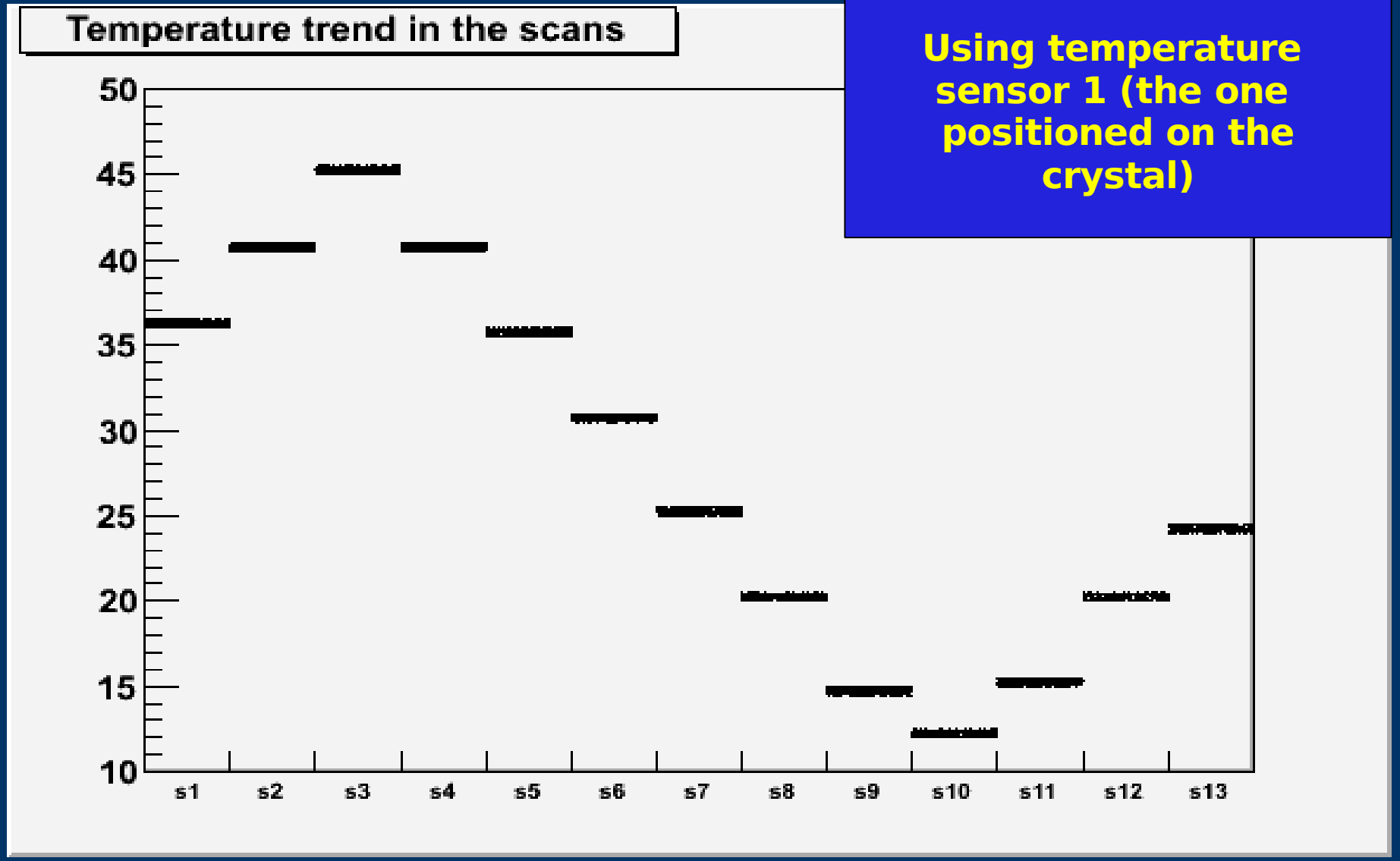
Temperature scans in single $PbWO_4$ crystal

- 13 angular scan performed at different temperature
- Each angular scan contain a different number of runs (7-30)
- Taken more than a scan at the same temperature

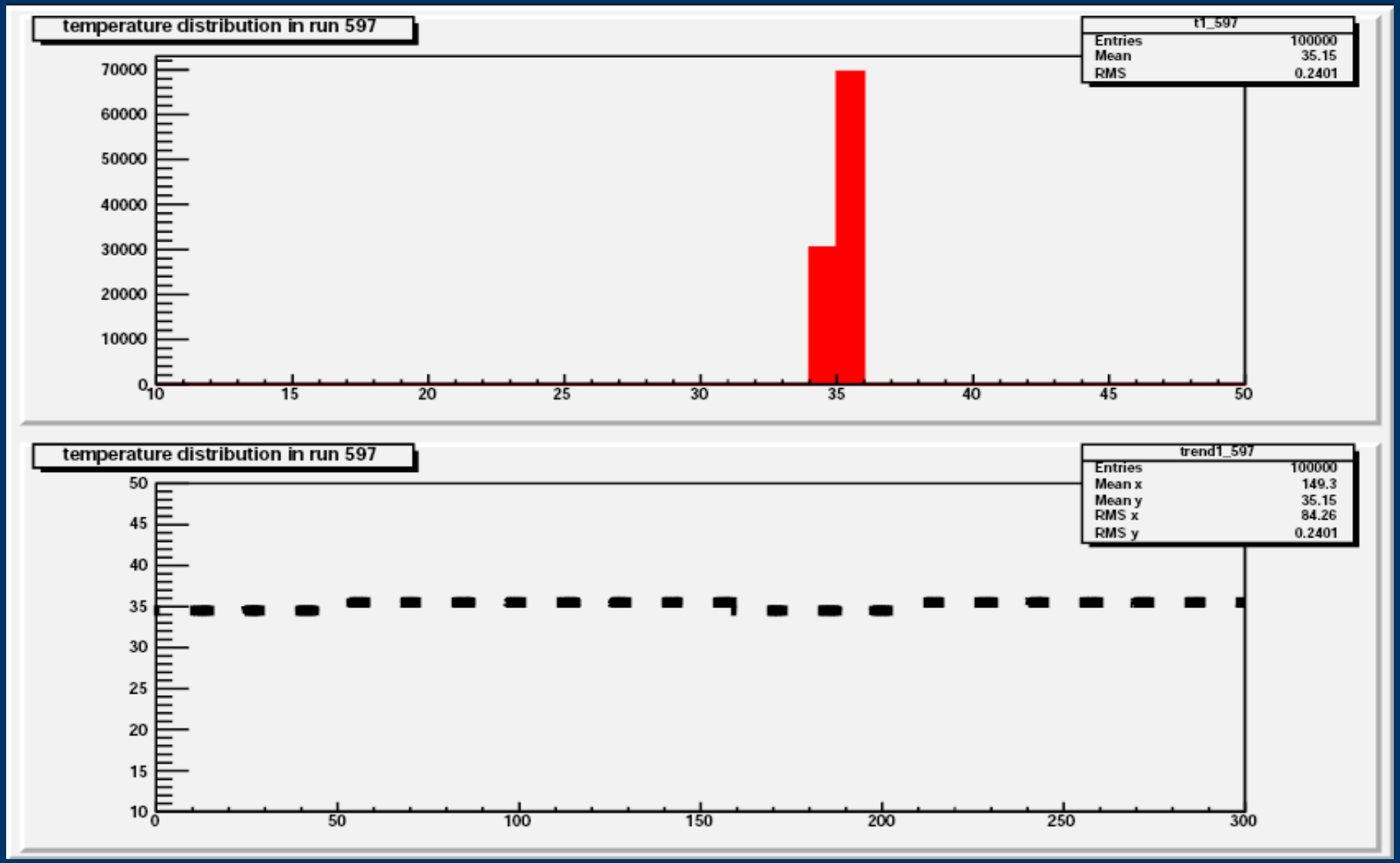
- *Temperature controlled measurements with crystal 2*
  Angular scans at different temperatures. Logbook pages 42-
  NB. No information from downstream beam chamber for
  - Runs 597 - 625, $T = 35°C$, $\theta = -60°$ to $+60°$
  - Runs 627 - 635, $T = 40°C$, $\theta = -35°$ to $+35°$
  - Runs 636 - 663, $T = 43°C$, $\theta = -60°$ to $+60°$
  - Runs 664 - 671, $T = 40°C$, $\theta = -35°$ to $+35°$
  - Runs 672 - 679, $T = 35°C$, $\theta = -35°$ to $+35°$
  - Runs 682 - 688, $T = 30°C$, $\theta = -35°$ to $+35°$
  - Runs 692 - 698, $T = 25°C$, $\theta = -35°$ to $+35°$
  - Runs 699 - 705, $T = 20°C$, $\theta = -35°$ to $+35°$
  - Runs 706 - 712, $T = 15°C$, $\theta = -35°$ to $+35°$
  - Runs 713 - 743, $T = 12°C$, $\theta = -60°$ to $+60°$
  - Runs 744 - 752, $T = 15°C$, $\theta = -35°$ to $+35°$
  - Runs 753 - 759, $T = 20°C$, $\theta = -35°$ to $+35°$
  - Runs 760 - 790, $T = 25°C$, $\theta = -60°$ to $+60°$

Temperature trend

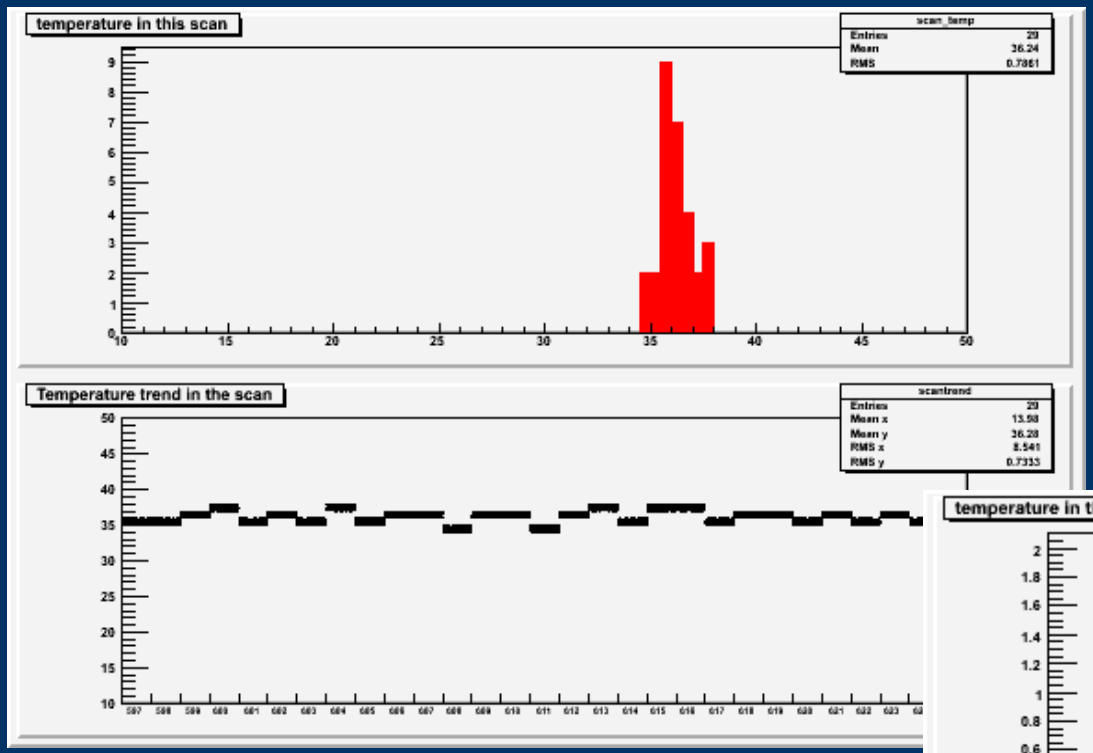


Using temperature sensor 1 (the one positioned on the crystal)

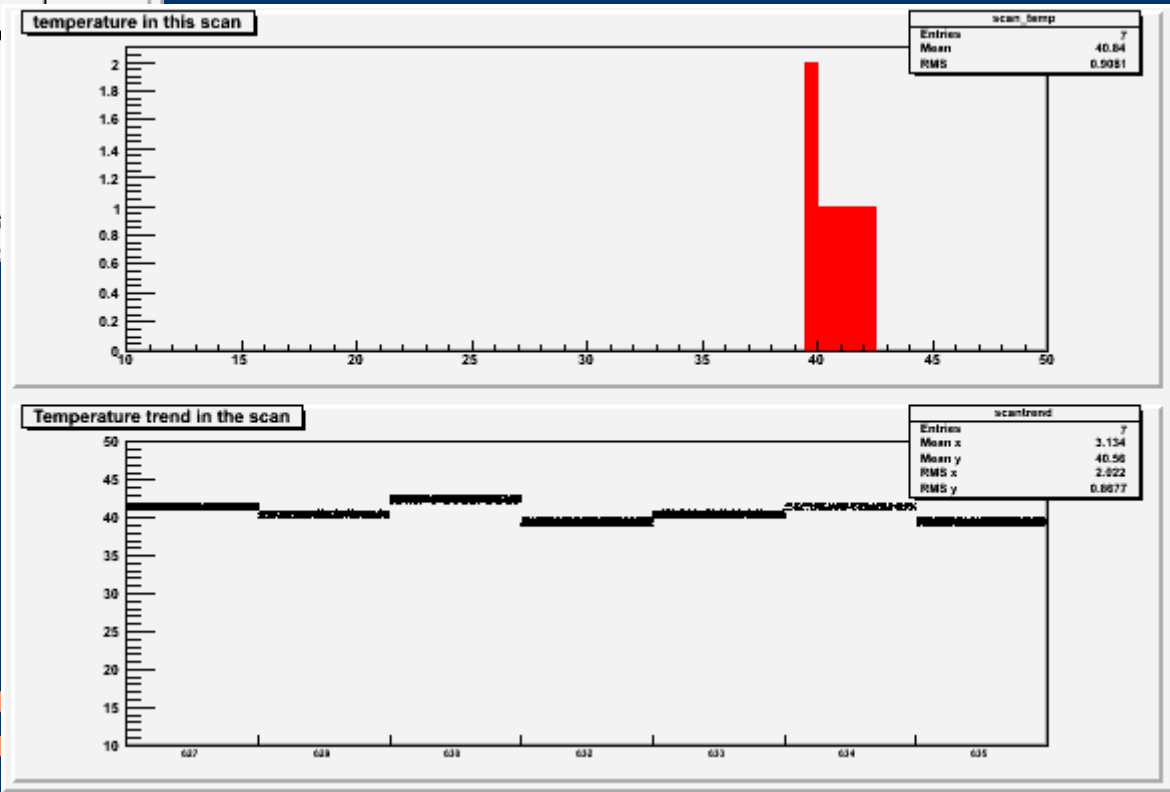
Check of temperature stability within the same run



Check of temperature stability within the same angular scan



An example of two angular scan



Check of temperature stability within the same angular scan

S1	36.2	0.8
s2	40.8	0.9
s3	45.3	0.4
s4	40.8	0.7
s5	35.7	0.4
s6	30.6	0.7
s7	25.1	0.4
s8	20.0	0.3
s9	14.9	0.5
s10	12.3	0.4
s11	15.1	0.5
s12	20.1	0.2
s13	24.1	0.2

- Relative error within the same angular scan at 3% at maximum
- Temperature stability within each angular scan reasonable

What's next

- Asymmetry as function of the angular position done at different temperature
- Light yield as function of temperature