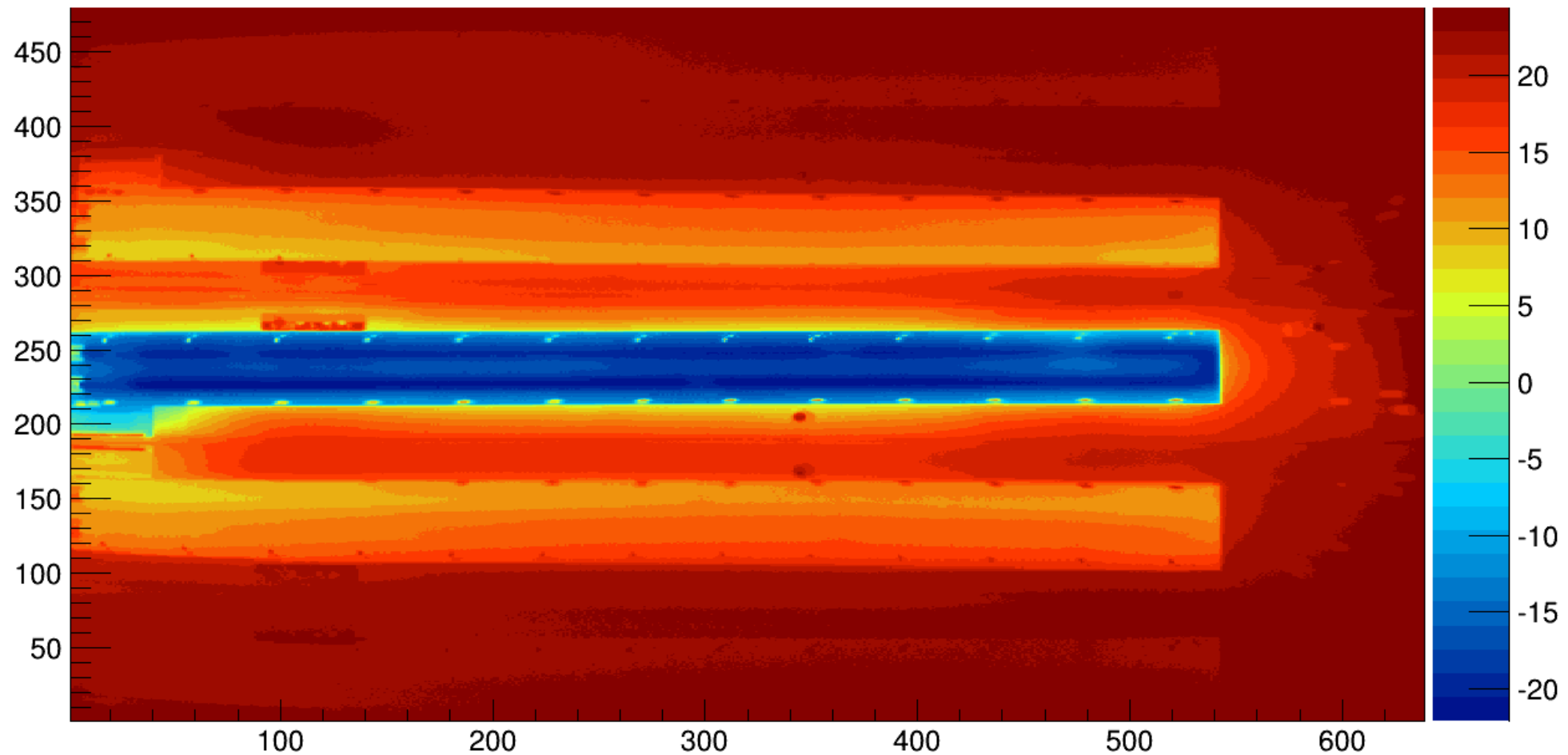


Thermal Camera Update

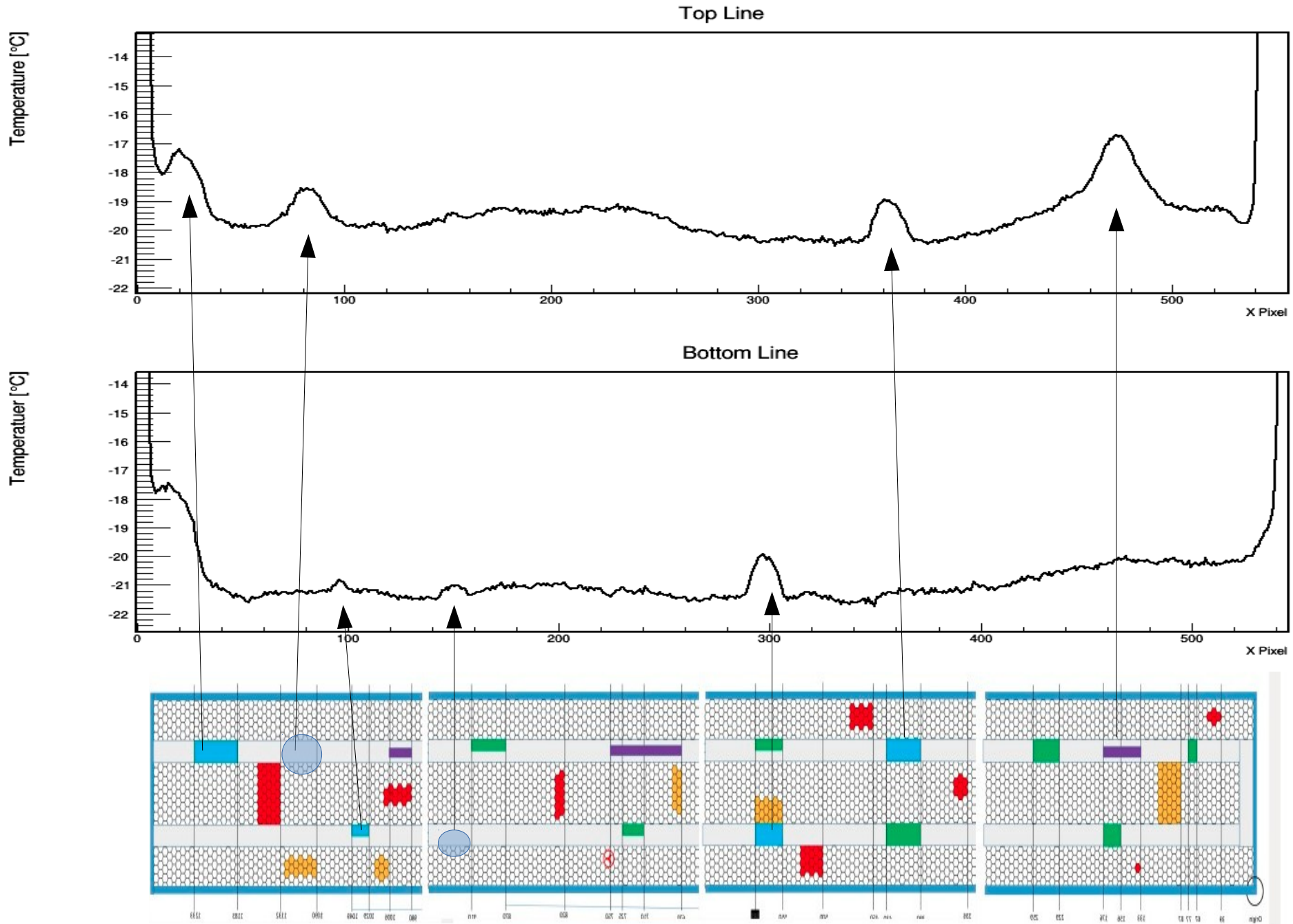
William Heidorn
November 2, 2016

Long Stave in New Box with 80 Degree Lens!!!

- Thermal image of long stave averaged over 200 frames taken at a rate of 6.25/s
- Temperature at thermocouples: input -32 C, output -28 C
ypixel:xpixel {temp}



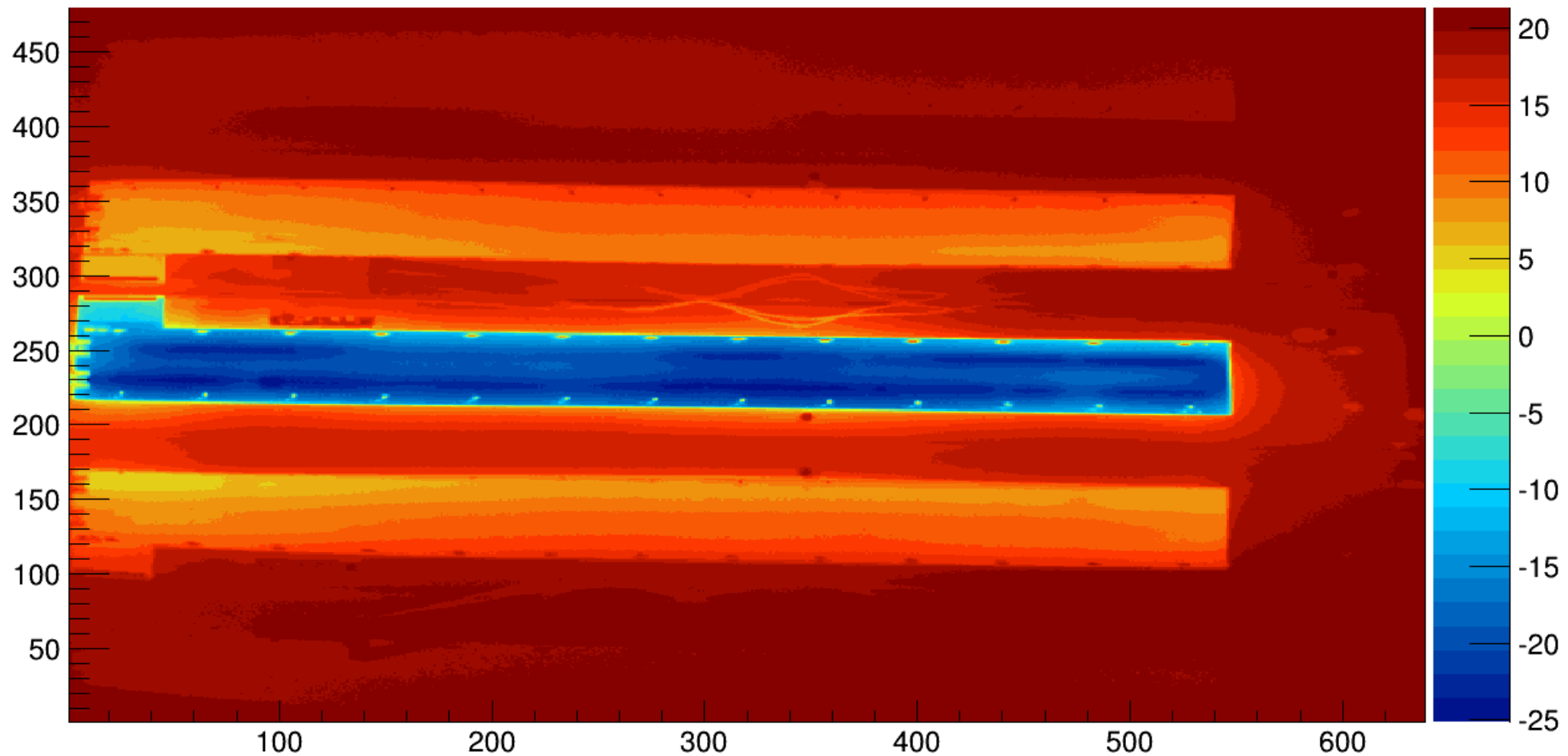
Top Side Defects



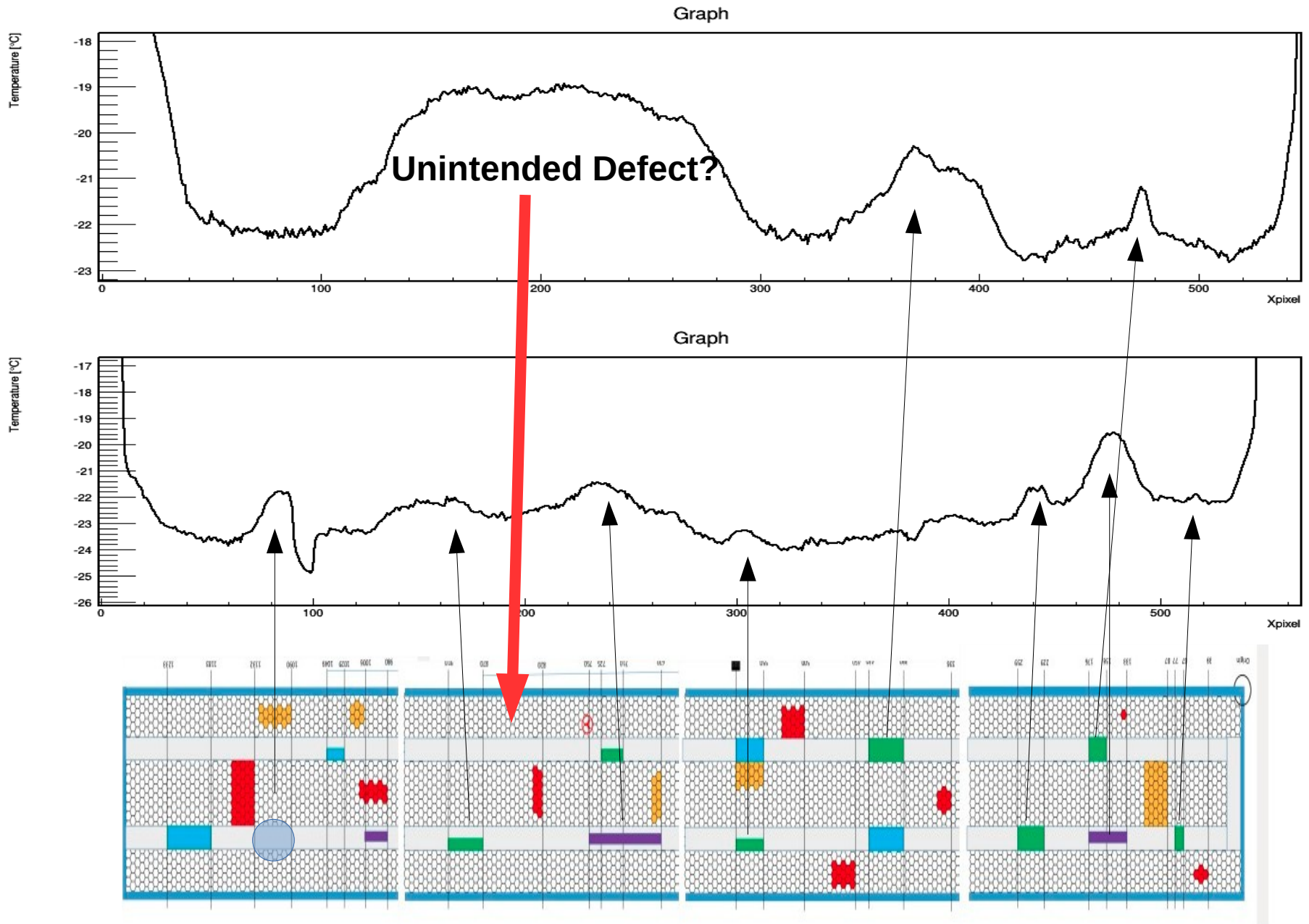
Long Stave Flip

- Thermal image of long stave averaged over 200 frames taken at a rate of 6.25/s
- Temperature at thermocouples: input -32 C, output -27 C

ypixel: xpixel {temp}



Bottom Side Defects



Defects Seen

The below diagram shows the defects that were seen with the stave cooled to around -30 C.

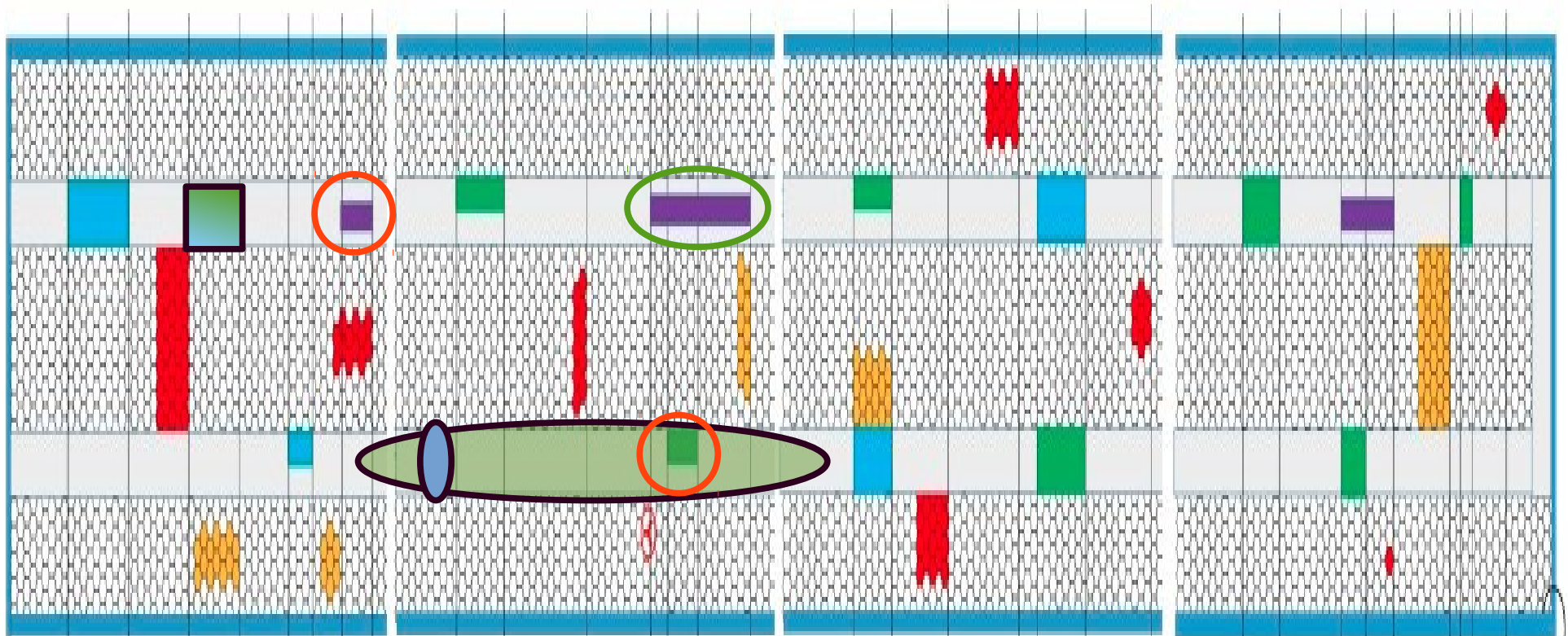
Blue defects- All seem visible. Maybe a small extra.

Green defects- Not all well defined

Purple defects- Not consistent, one is seen on both sides, one on only one side, the smallest is not visible.

Mystery Defect- Seems well defined and is visible on both sides

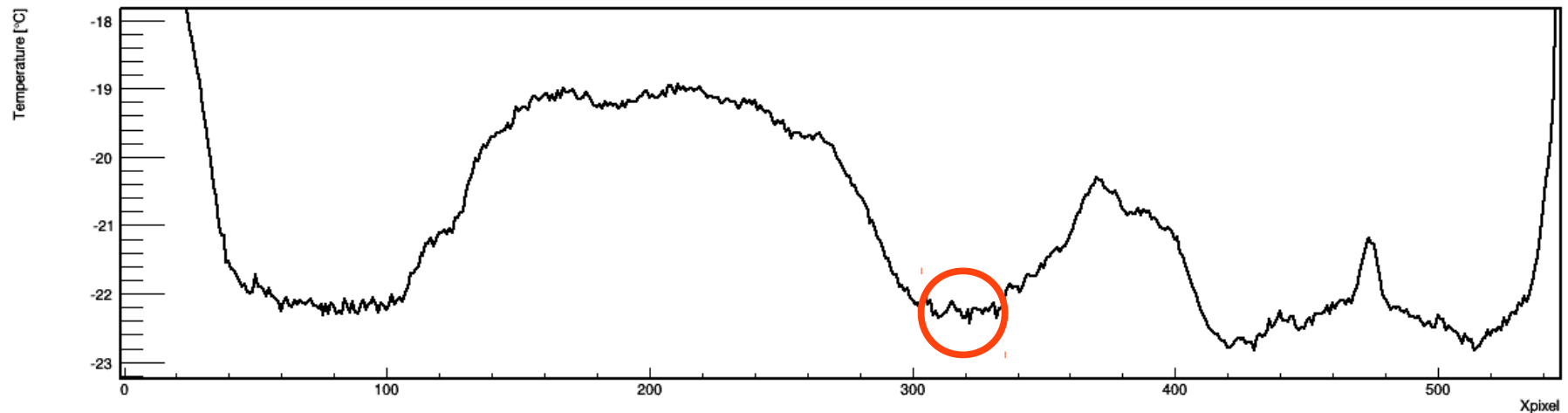
Major Flaw- There is a large defect on the green side?



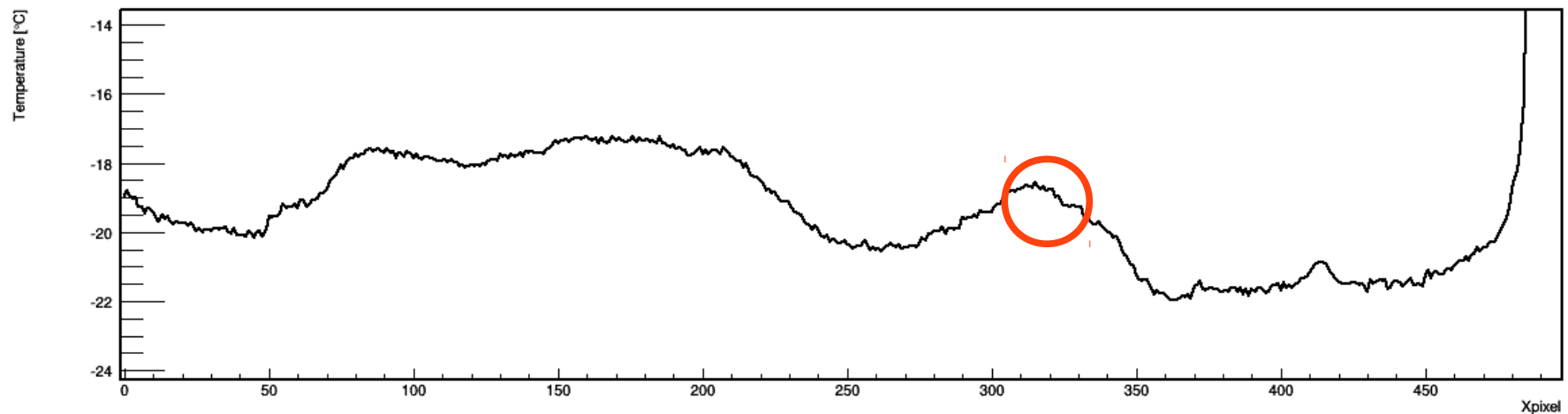
Camera Reflection Top Line?

- Shifted camera above flipped stave and took a second measurement.
- No obvious camera image on either of the lines

Graph

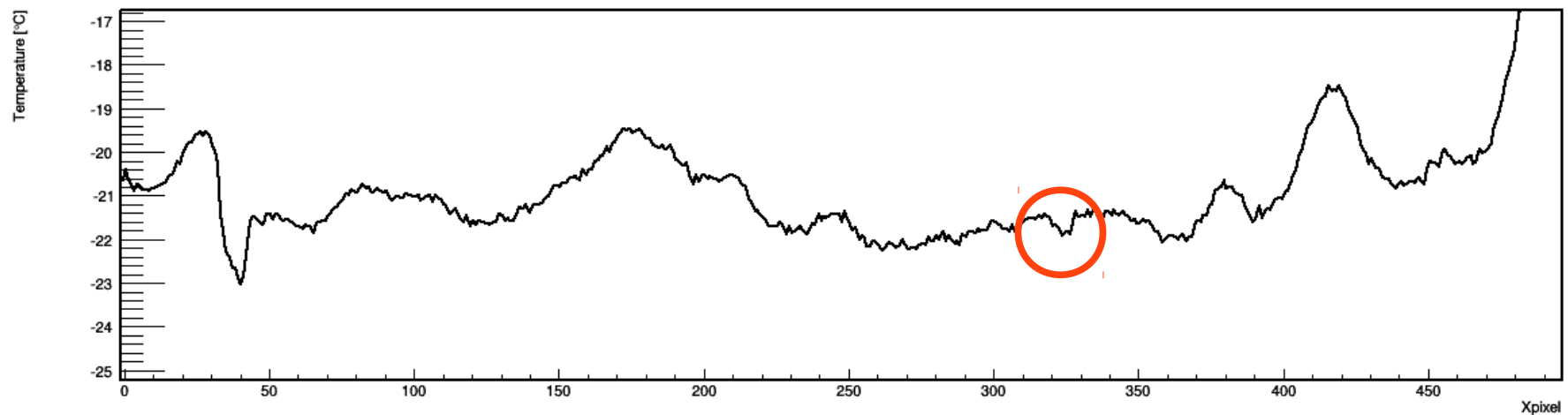
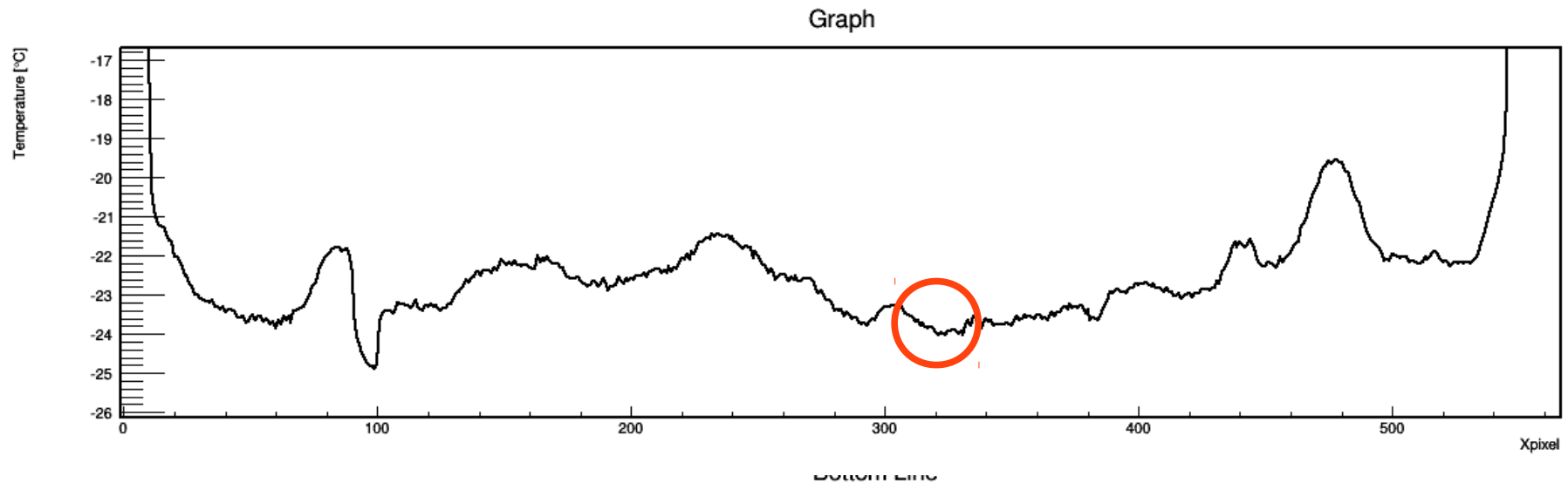


Top Line



Camera Reflection Bottom Line?

- Shifted camera above flipped stave and took a second measurement.
- No obvious camera image on either of the lines



Conclusions

- Mystery defect found
- Full pipe defects are best defined
- Partial pipe defects do not always give well defined peaks
- Major(unintended?) flaw on green side?
- No obvious camera image