Weekly Update

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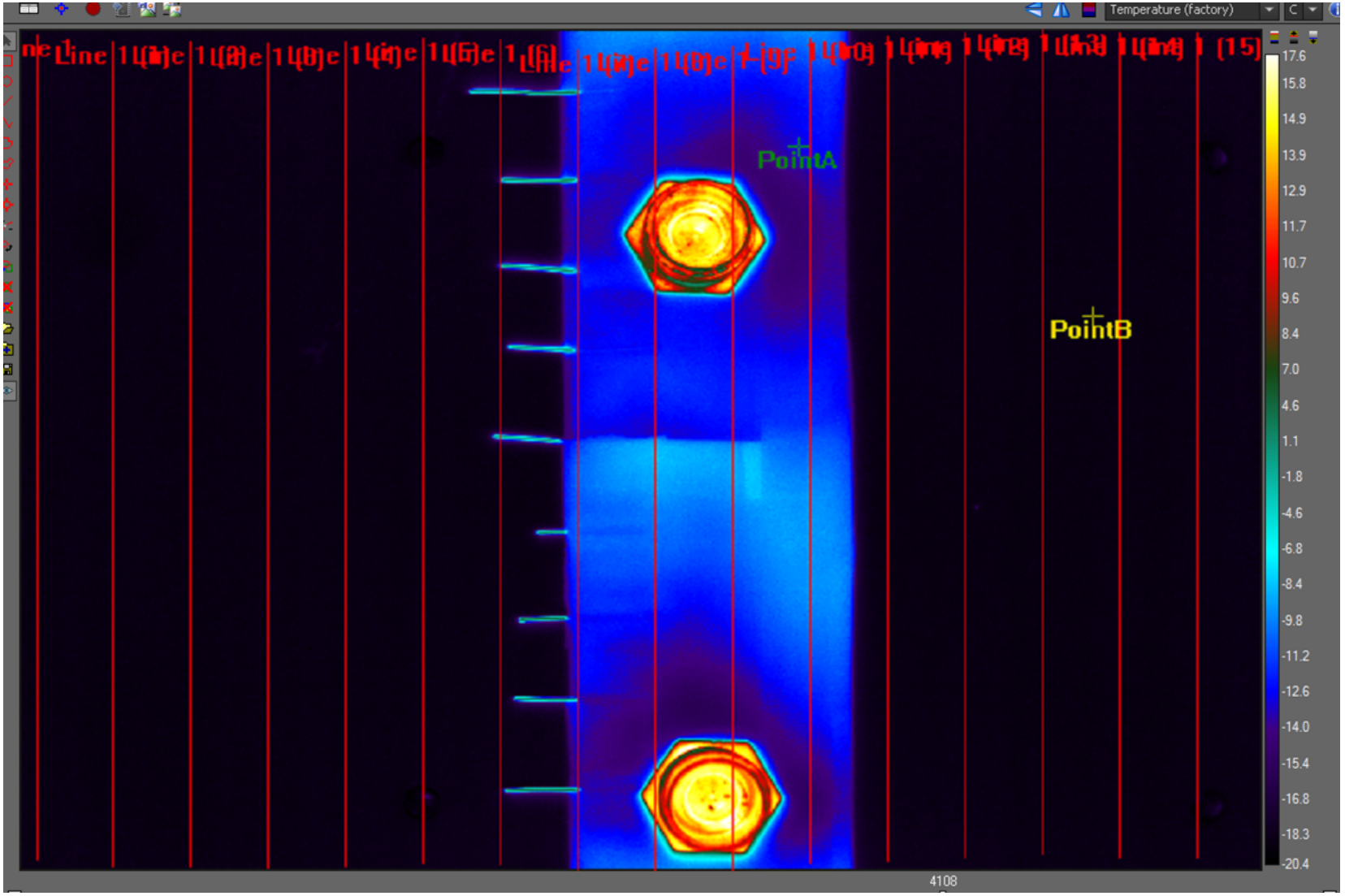
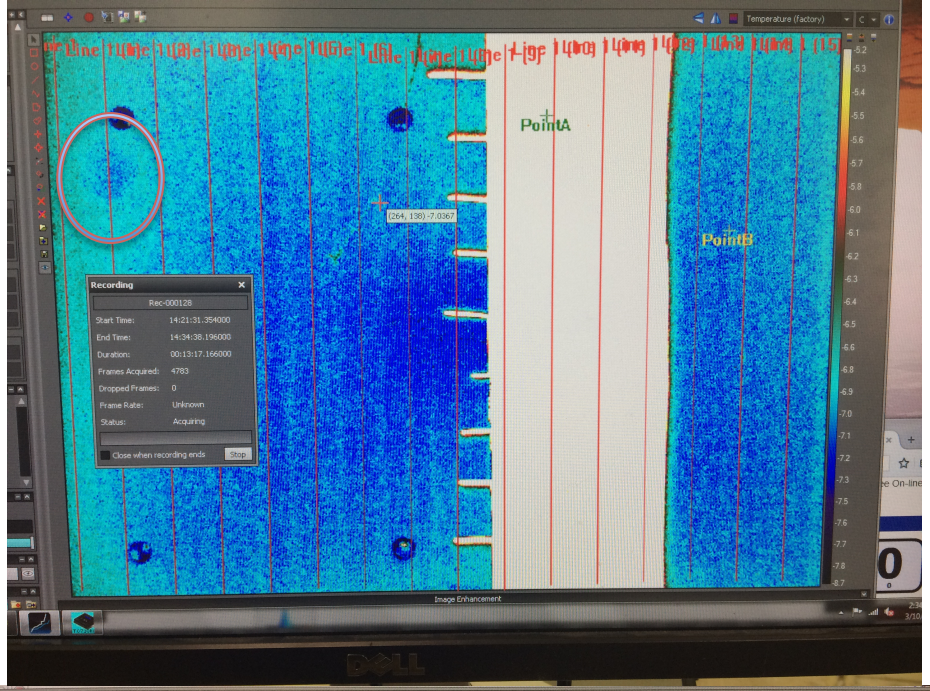
Experiment

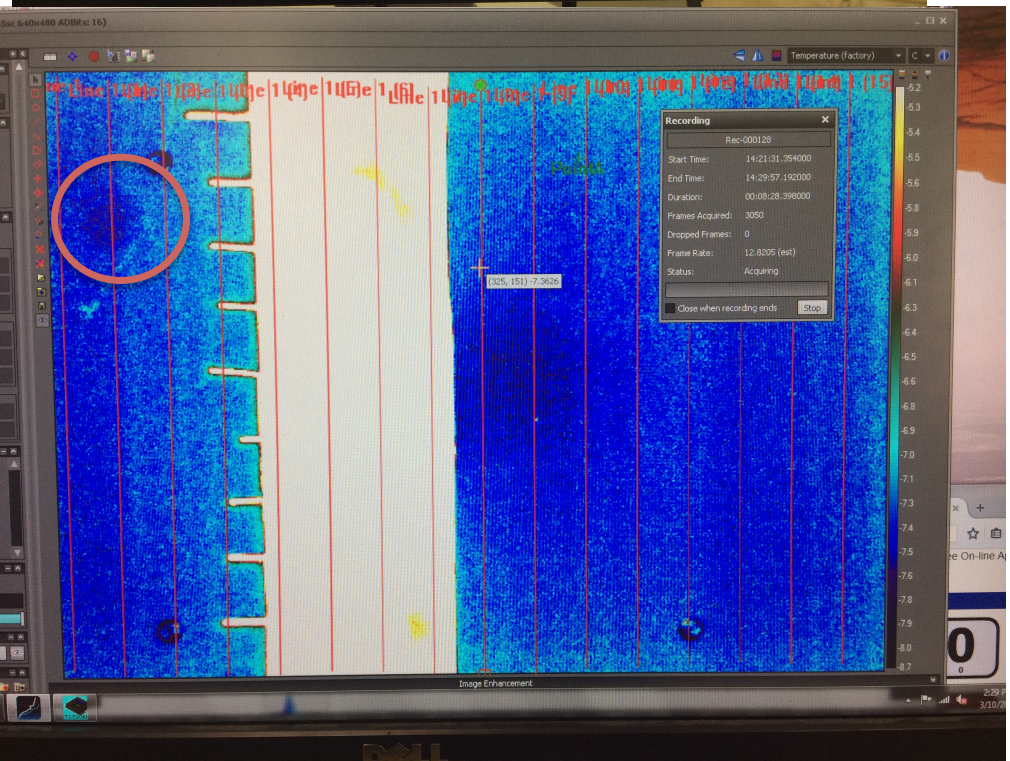
- The idea is to ‘see’ the same physical area (rectangle) by different parts of the camera’s FOV. The big difference with respect to the camera is that the areas of observations in the FOV should olverlap and cover most of the FOV => We should have a bigger picture of the behavior of the camera.


Temperature (factory)
PointA
PointB
17.6
15.8
14.9
13.9
12.9
11.7
10.7
9.6
8.4
7.0
4.6
1.1
-1.8
-4.6
-6.8
-8.4
-9.8
-11.2
-12.6
-14.0
-15.4
-16.8
-18.3
-20.4
4108

Details of the experiment (See attached word file)

- FOV divided into regions with 40 pixels of separation on the longest side (640). In reality there are 15 areas used not including the ones at the edges. (7 pixels lost in the left, 32 on the right).
- The temperature was -15˚C the whole time, humidity of 0.0%, dry nitrogen at 3 Psi, 6 frames per second collecting 234 frames in each area.
- The object on the photo was used as a reference point of the physical line.

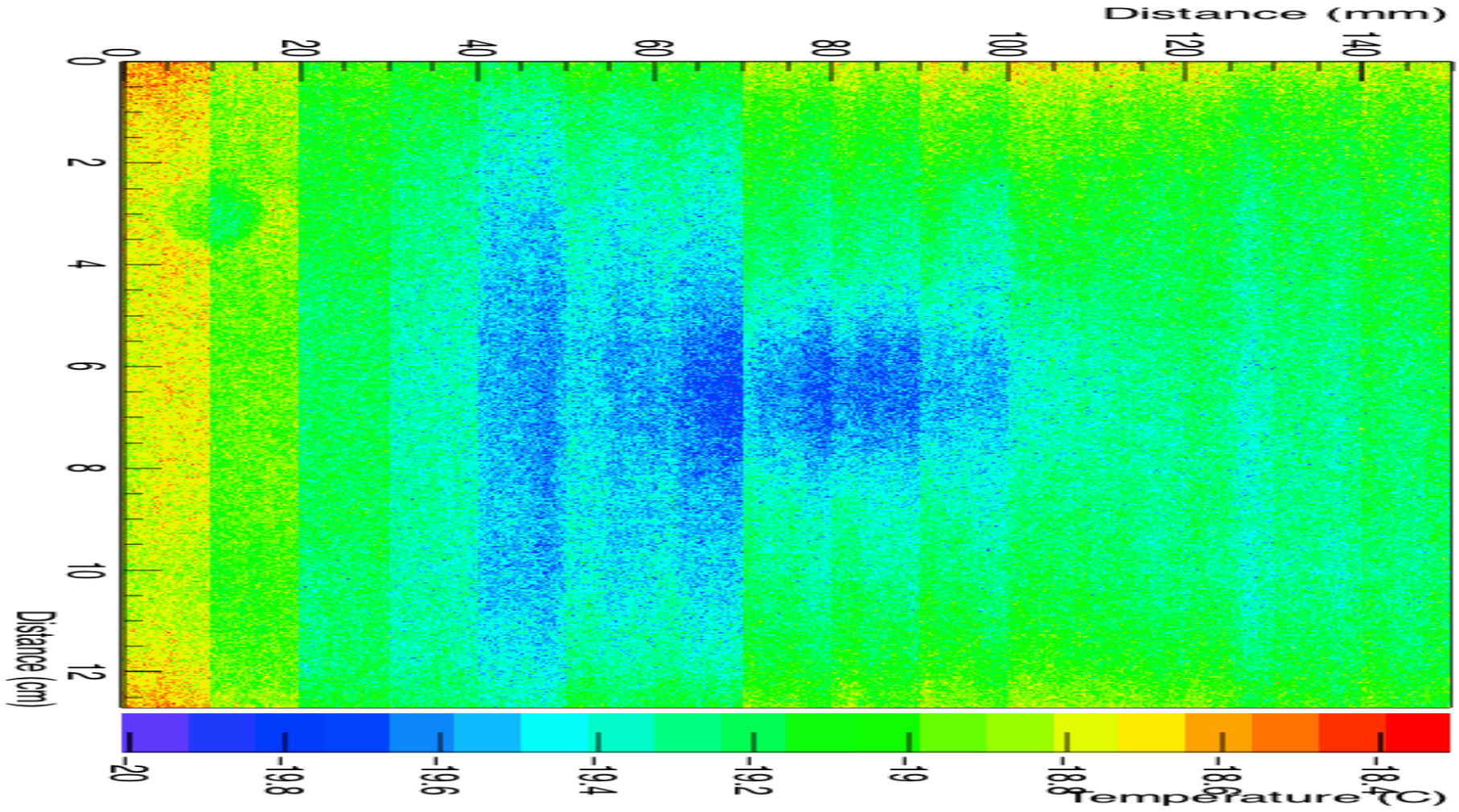




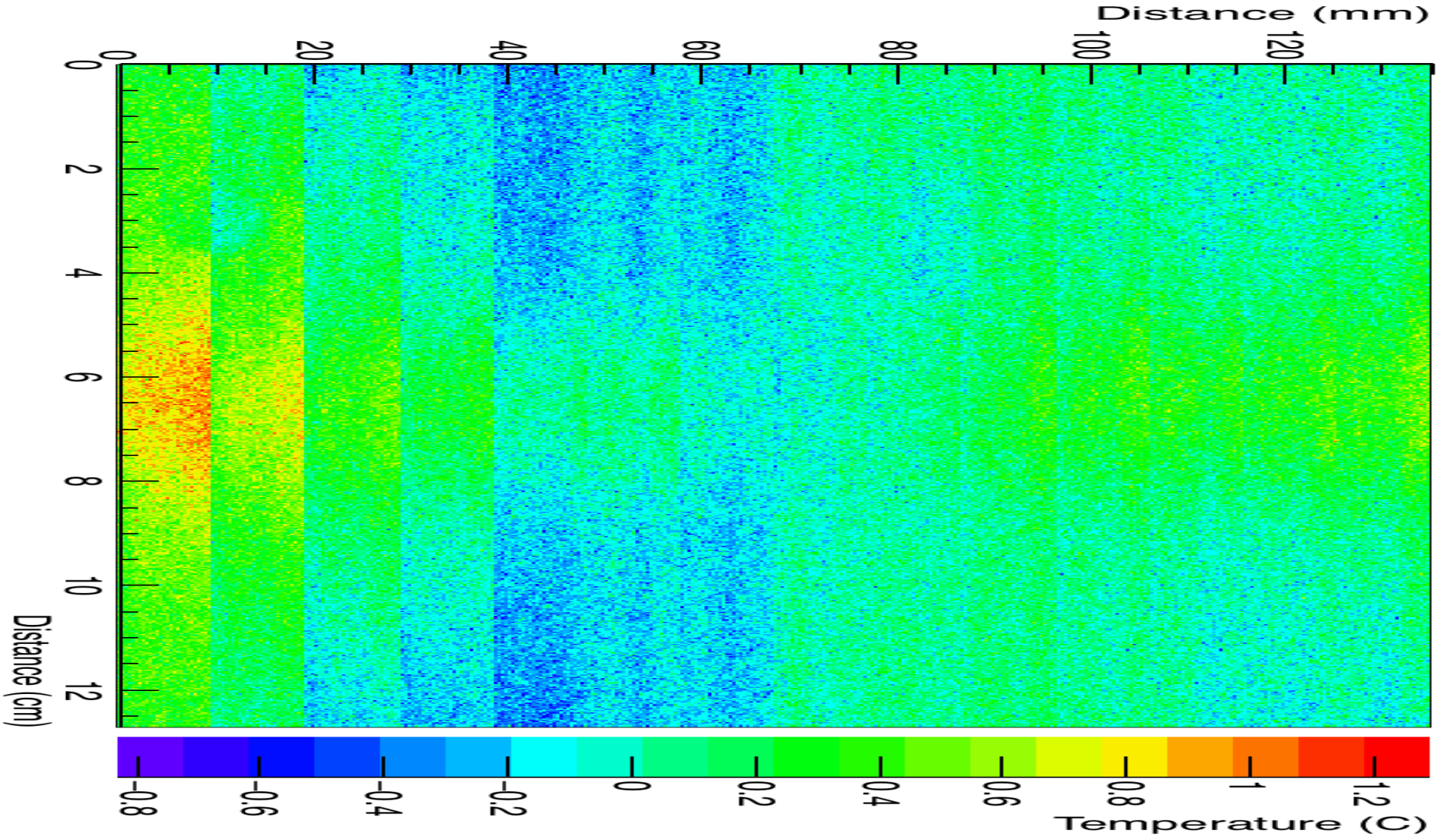
There is this spot observed in the camera's FOV since it moves when the camera is moved, then it is not on the plate. The difference at -15˚C was about 0.2˚C.

I checked the lens but I couldn't find anything on it.

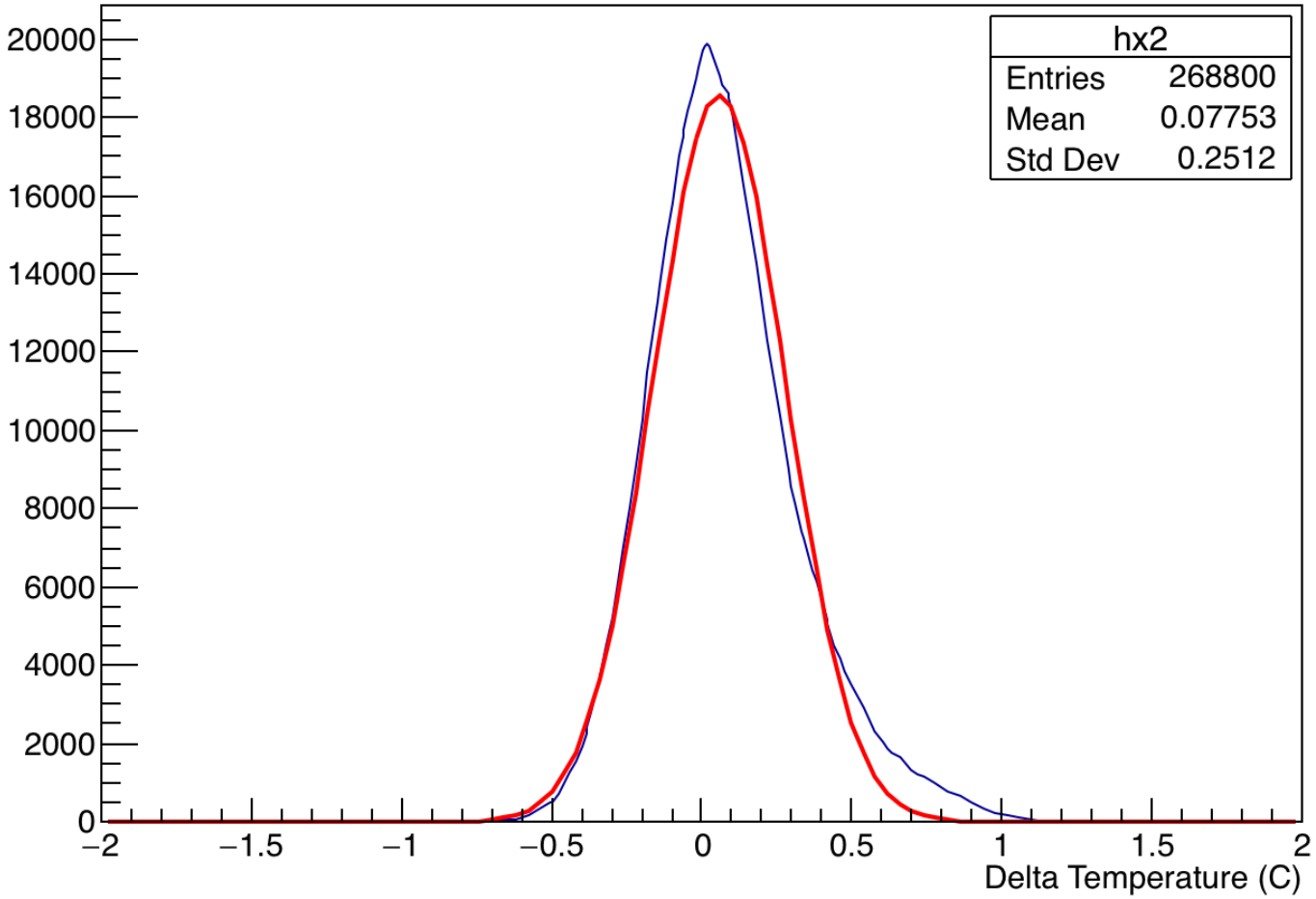
FoV of the camera with average in time (234 frames) of each vertical line.



Same plot, but now the difference with respect to the left side of the FOV



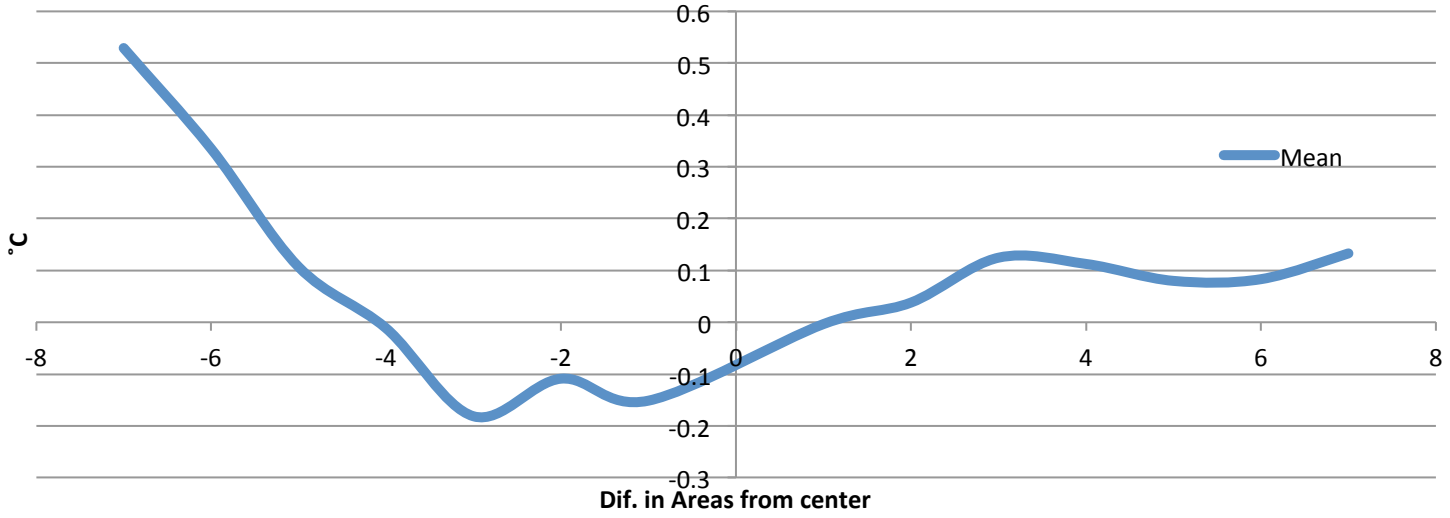
Histogram of the areas – center area (pixel by pixel)

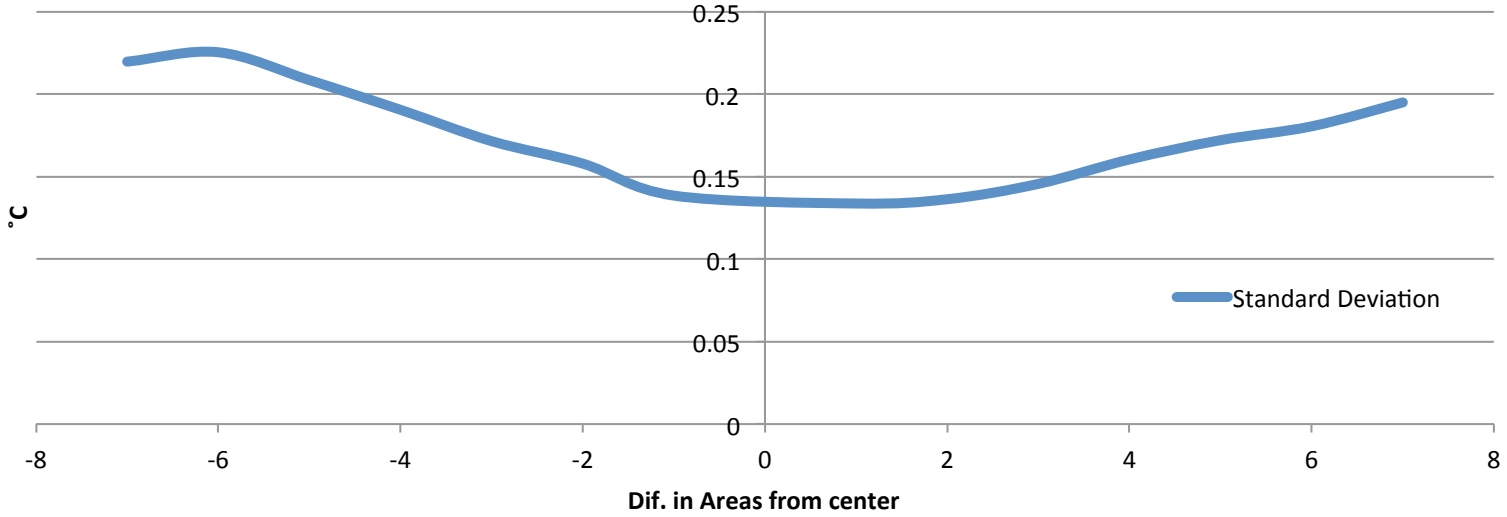


FIT:
Mean:
0.0588

Sigma:
0.2210

Doing the same calculation but per single-area minus center-area, and keeping mean and sigma, we see:





To do:

- Do the same for different temperatures and in the y-direction, and look for similar patterns.

- I want to check how much the camera's readings change as a function of time. For example,