

Defective Camera Effects - PPS

Comparative measurement of defective Proscilica cameras

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Overview

- Comparative image evaluation of five cameras at 1030 nm
- All AVT Prosilica GC1350 cameras
- One good, new(ish) reference camera
- Four “disposable”, radiation-damaged cameras
- All have same settings, ND filters as needed

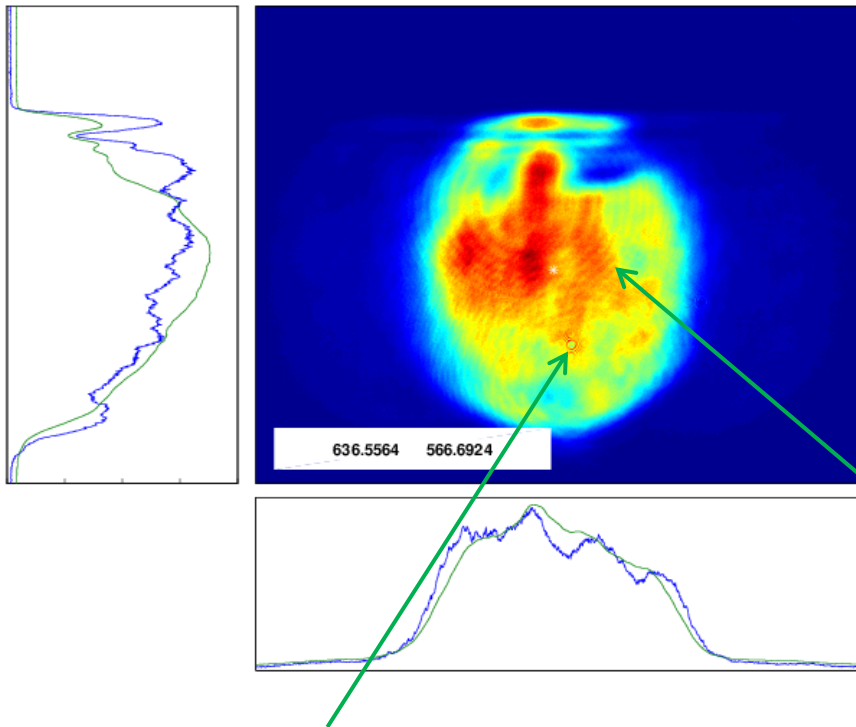


Summary

Camera	ND Filters	SNR	Other	Location
Reference	Y	Good		ELLA Stabilization
#1	N	V. Bad	Low QE?	-
#2	N	Okay		ELLA C4
#4	Y	Good		ELLA C5
#5	N	Okay	Burn spot	ELLA C1



Reference Camera



Camera: Ref

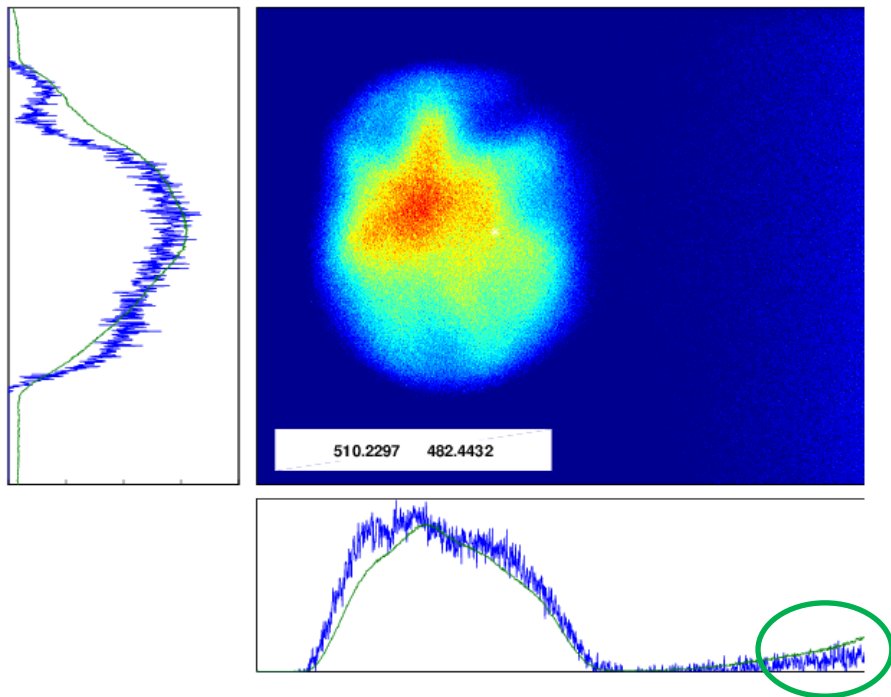
ND filters: Y

SNR: Excellent

Location: ELLA stabilization

> Note dust particles interference rings from ND filters

Disposable Camera #1



Camera: #1

ND filters: N

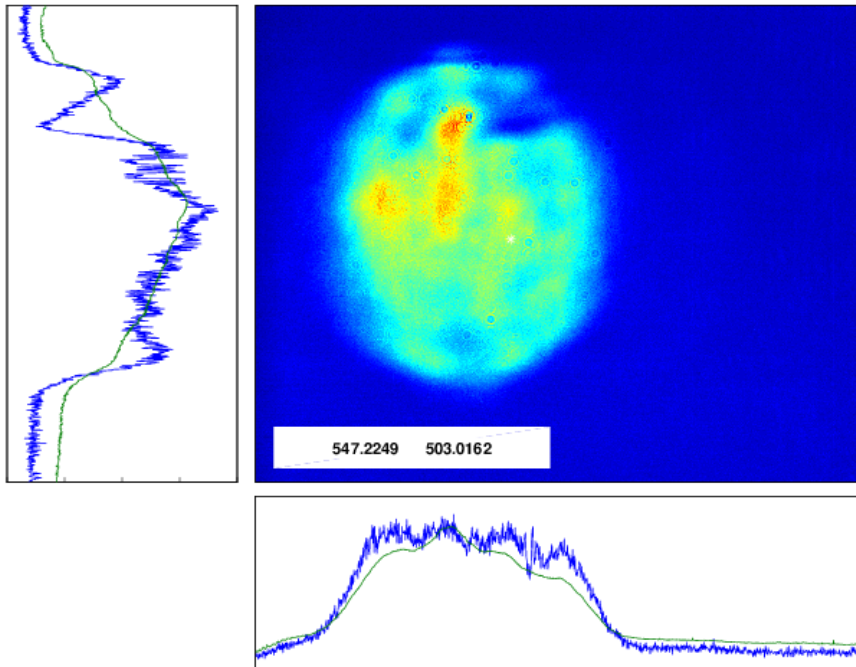
SNR: V. Bad

Location: none

- Note the characteristic edge slope in the cross-section
- Visually okay in visible. Low QE?



Disposable Camera #2



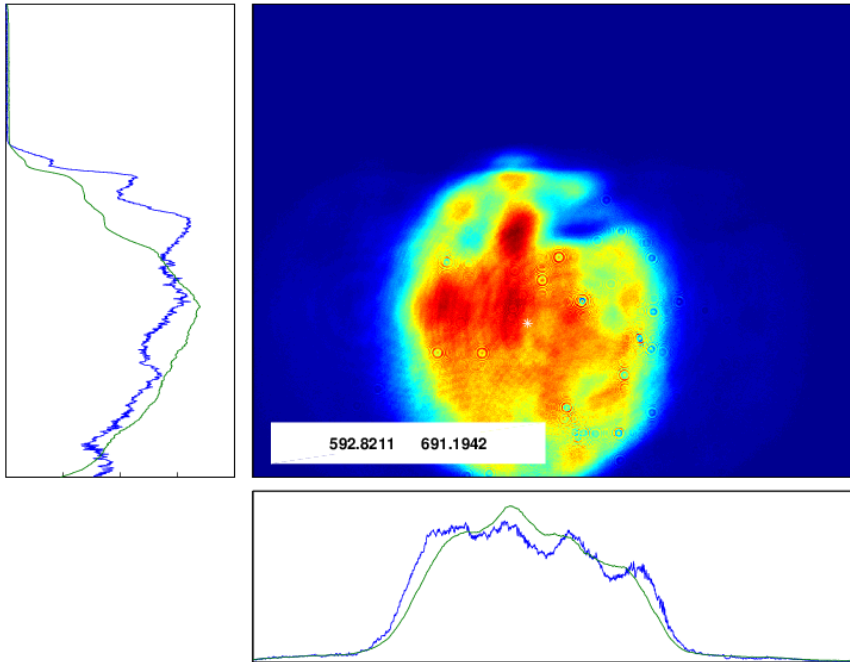
Camera: #2

ND filters: N

SNR: Okay

Location: ELLA C4

Disposable Camera #4



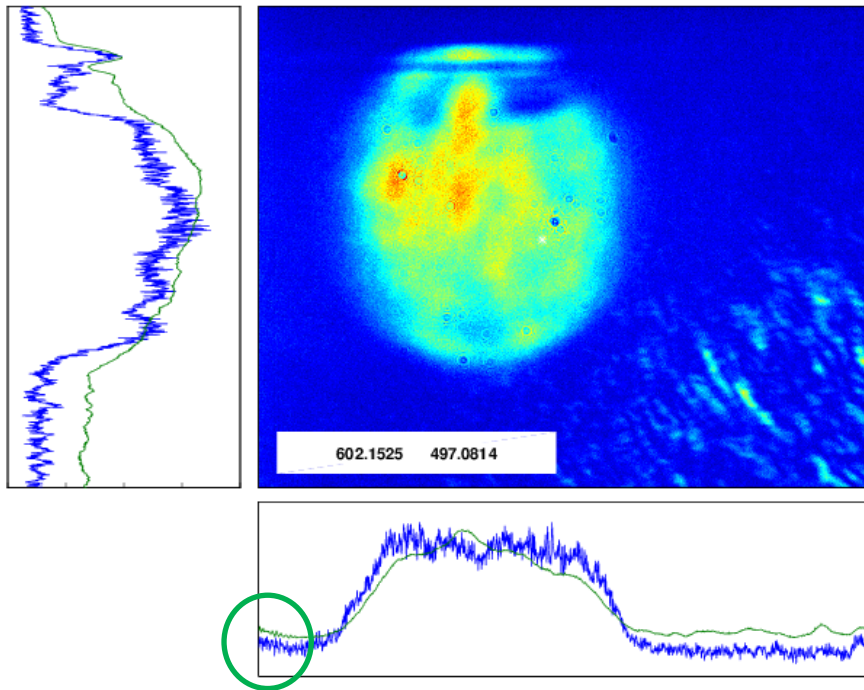
Camera: #4

ND filters: Y

SNR: Good

Location: ELLA C5

Disposable Camera #5



Camera: #5

ND filters: N

SNR: Okay

Location: ELLA C1 (pinhole)

- Note small edge slope in the cross-section
- Background noise due to physical damage

Bitslicing

> Possible analysis: bit plane slicing

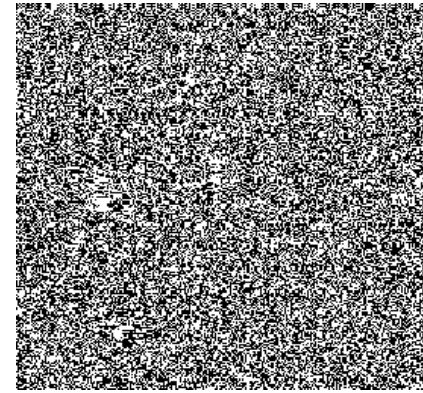
Original Image



MSB



LSB



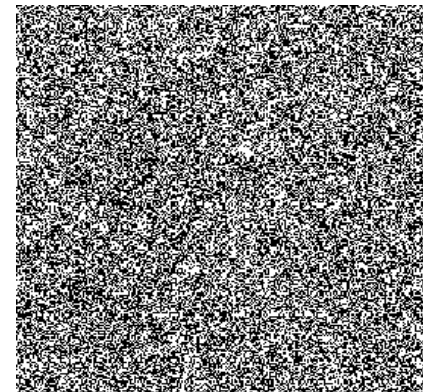
Noisy Image



MSB

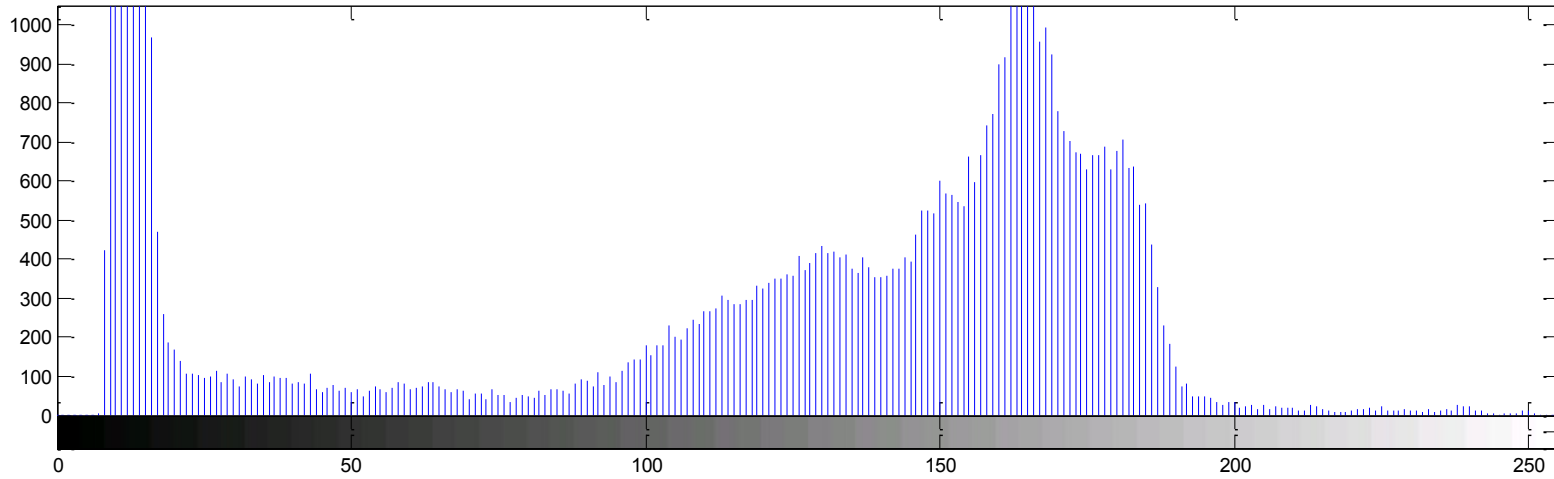


LSB



Histograms

Original Image Histogram



Noisy Image Histogram

