

```
In [2]: # Setup the library
import pyrogue as pr
import os, sys
import matplotlib.pyplot as plt
import time
import numpy as np
import math

top_level=f'{os.getcwd()}/../'
pr.addLibraryPath( f'{top_level}/scripts' )
import setupLibPaths
import epix_hr_single_10k
import ePixViewer.Cameras as cameras
```

```
In [3]: from importlib import reload
reload(cameras)

MAX_NUMBER_OF_FRAMES_PER_BATCH = 1000
cameraType = 'ePixHr10kTBatcher'
bitMask = 0xffff
currentCam = cameras.Camera(cameraType = cameraType)
currentCam.bitMask = bitMask
currentCam.MAX_NUMBER_OF_FRAMES_PER_BATCH = MAX_NUMBER_OF_FRAMES_PER_BATCH
```

Camera ePixHr10kTBatcher selected.

Helper functions

```
In [4]: def read_asic_test():
    print(filename)
    #####
    f = open(filename, mode = 'rb')
    imgDesc = []
    for i in range(1):
        print("Starting to get data set %d" % (i))
        allFrames = currentCam.getData(f,8)
        imgDesc2 = currentCam.getDescImaData(allFrames)
        if i == 0:
            headers = allFrames[:,0:6]
            imgDesc = imgDesc2
        if i == 1: #skips the first dataset
            headers = allFrames[:,0:6]
            imgDesc = imgDesc2
        else:
            headers = np.concatenate((headers, allFrames[:,0:6]),0)
            imgDesc = np.concatenate((imgDesc, imgDesc2),0)
        if allFrames.shape[0] != MAX_NUMBER_OF_FRAMES_PER_BATCH:
            break

    number0fFrames = allFrames.shape[0]
    print(allFrames.shape)
    #####
    return imgDesc
```

```
In [16]: def noise_print(offset = 0):
    print(imgDesc[100].shape)
    imgDescLoc = imgDesc[:, :, offset:offset+192]
    hg_n = imgDescLoc.astype('float64')
    hg_n -= np.median(hg_n, axis=0, keepdims=True)
    hg_n -= np.median(hg_n, axis=(1,2), keepdims=True)
    hg_n -= np.median(hg_n, axis=2, keepdims=True) # rows (cols)
    hg_n -= np.median(hg_n, axis=1, keepdims=True) # cols (rows)
    imgDescCMC = hg_n

    darkAvg = np.mean(imgDescLoc, 0)
    noiseMap = np.std(imgDescLoc, 0)
    medianNoise = np.median(noiseMap)
    noiseMap[noiseMap>medianNoise*4]=0

    darkAvgCMC = np.mean(imgDescCMC, 0)
    noiseMapCMC = np.std(imgDescCMC, 0)
    medianNoiseCMC = np.median(noiseMapCMC)
    noiseMapCMC[noiseMapCMC>medianNoiseCMC*5]=0

    plt.figure(1, figsize=(12,8), dpi=150)
    plt.imshow(noiseMap, cmap='gray', vmin=0, vmax=100)
    plt.colorbar(location='right', anchor=(0, 0.3), shrink=0.7)

    plt.figure(2, figsize=(12,8), dpi=150)
    dataset = noiseMap
    plt.hist(dataset.reshape(-1), bins=100, label=f'\nNoise Map distribution A')
    dataset = noiseMapCMC
    plt.hist(dataset.reshape(-1), bins=100, label=f'\nNoise Map distribution A')
    plt.yscale('log')
    plt.title("histogram")
    plt.legend()
    plt.show()

    plt.figure(3, figsize=(12,8), dpi=150)
    print(imgDesc.shape)
    dataset = imgDesc[:, :, offset:offset+192]
    print(dataset.shape)
    plt.plot(dataset[:, 10, :])
    #plt.legend()

    plt.figure(4, figsize=(12,8), dpi=150)
    print(imgDesc.shape)
    dataset = imgDesc[:, :, offset:offset+192]
    print(dataset.shape)
    plt.plot(dataset[:, 10, 86])
    #plt.legend()

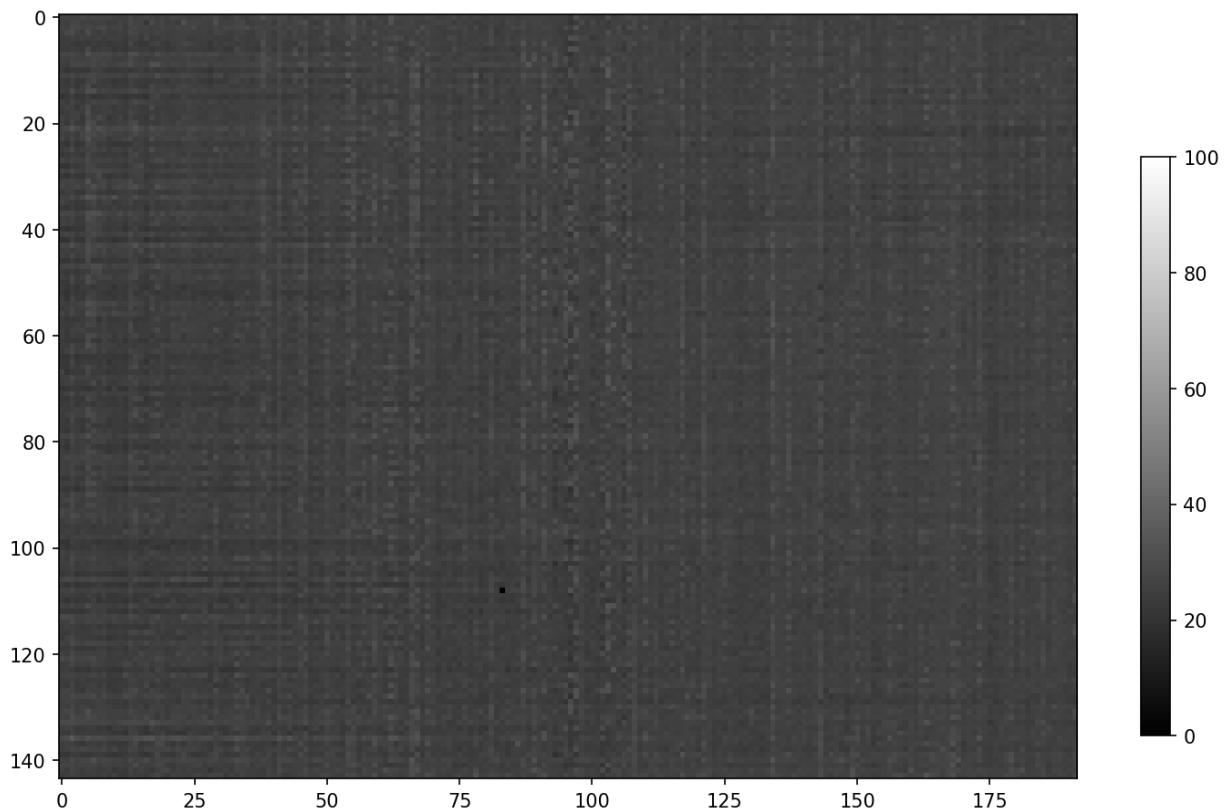
    return noiseMap, darkAvg
```

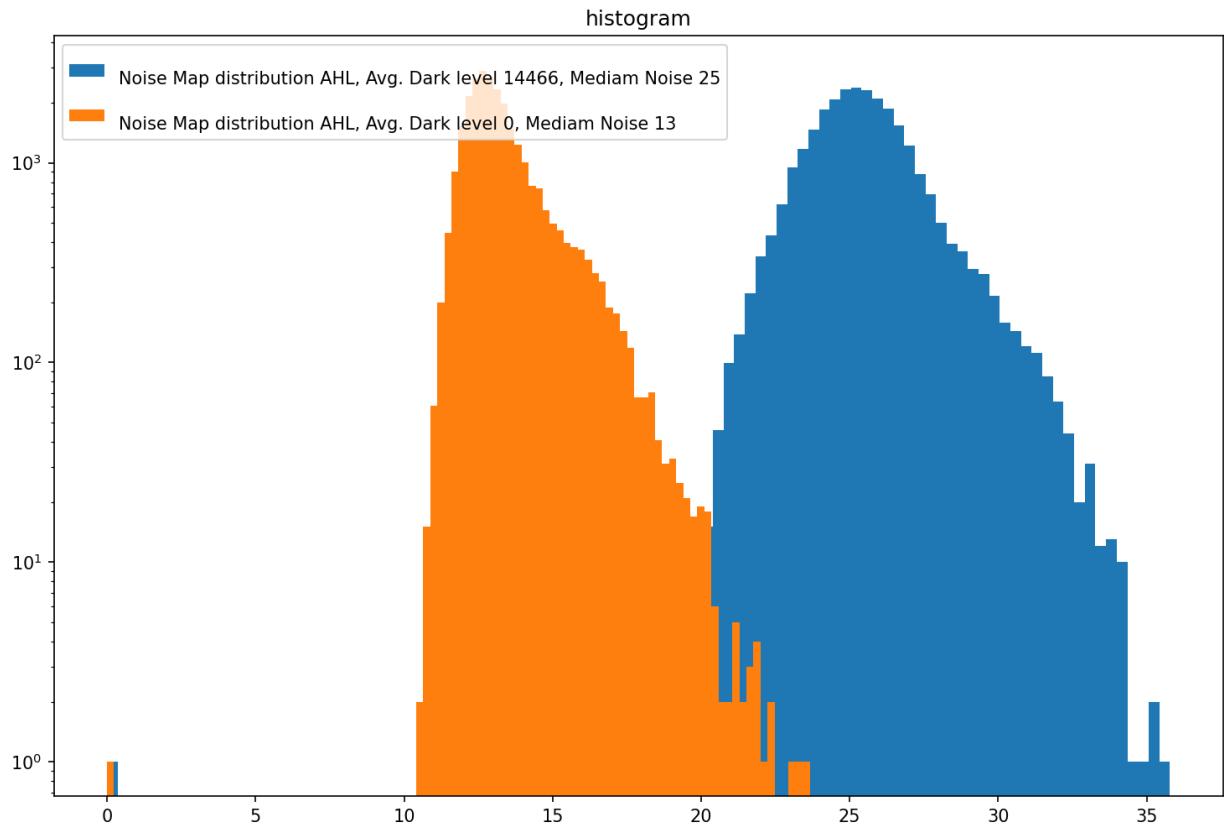
Pixel Optimizaion

```
In [17]: PreampList = [7, 6, 5, 4, 3, 2, 1, 0]
Vld1_b = 0
Pixel_CB= 7
Filter_DAC= 17
VRef_DAC = 58
```

```
for Preamp in PreampList:  
  
    #####  
    # Remove previous dataset  
    filename = (f'/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_  
    #####  
    imgDesc = read_asic_test()  
    #####  
    [noiseMap, darkAvg] = noise_print(0)
```

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz
_Preamp_7_Vld1b_0_PixelCB_7_Filter_DAC_17_VRrefdac_58_run1.dat
Starting to get data set 0
Read 1000 frames
numberOfFrames in the 3D array: 1000
Starting descrambling images
(1000, 56088)
(144, 384)





(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10KTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preampl_6_Vld1b_0_PixelCB_7_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

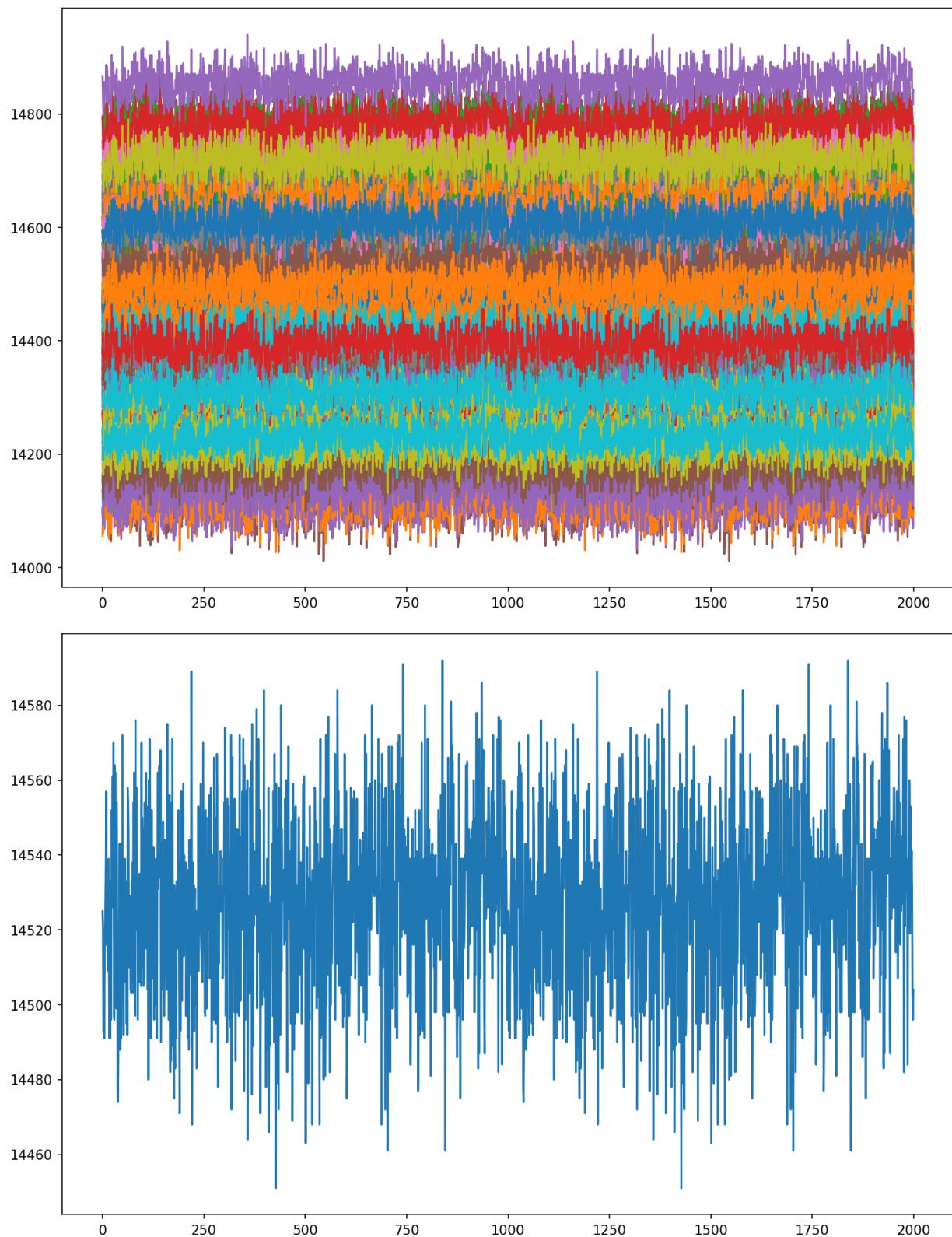
Read 1000 frames

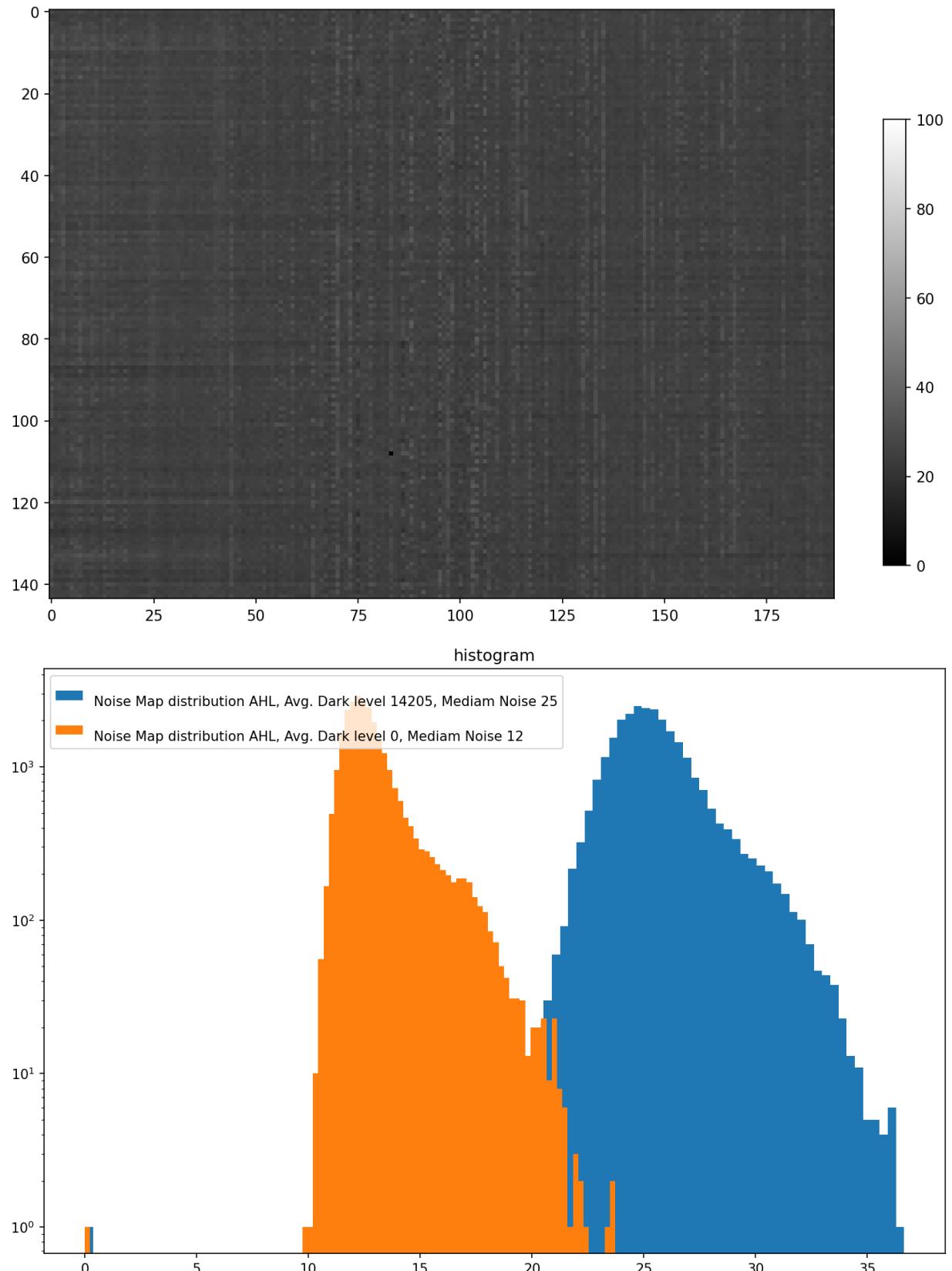
numberOfFrames in the 3D array: 1000

Starting descrambling images

(1000, 56088)

(144, 384)





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set_0_ePix10KTLCLS-IITiming_ASICv3_320MHz_noise-Analyses-ASIC2_WithStrongBack-HighGain

(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz
_Preamp_5_Vld1b_0_PixelCB_7_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

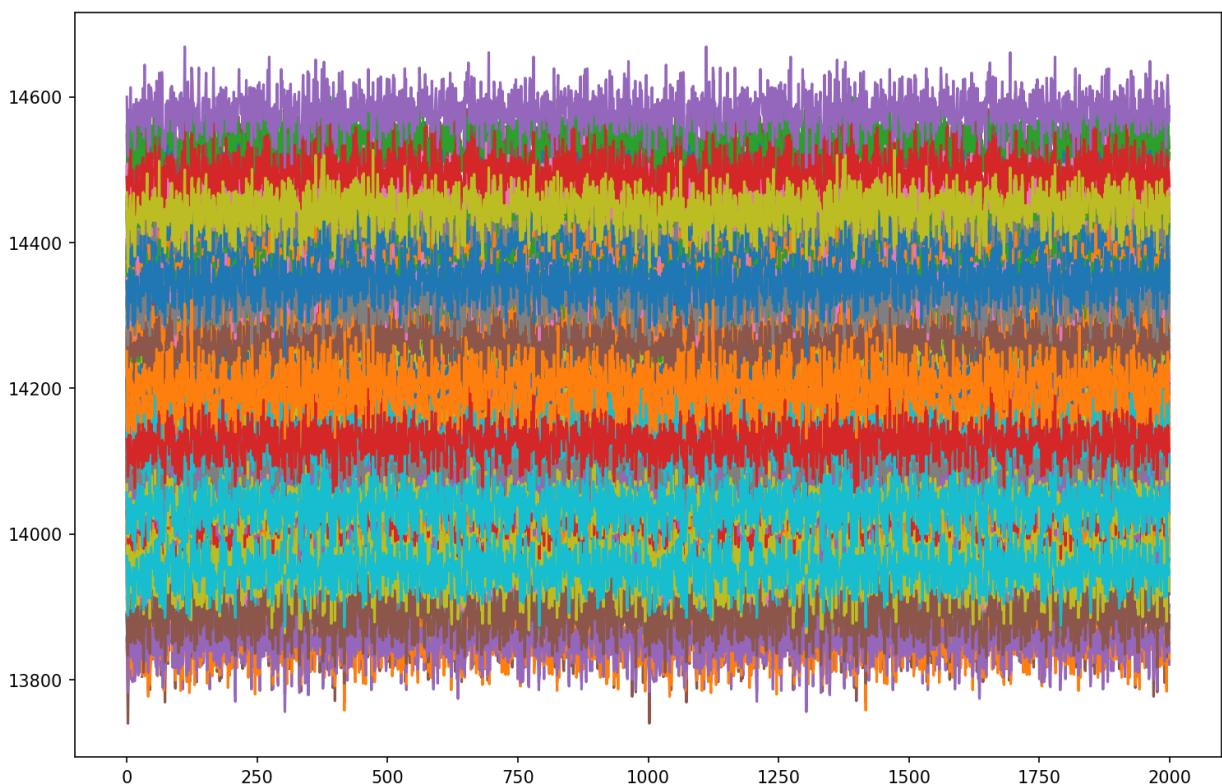
Read 1000 frames

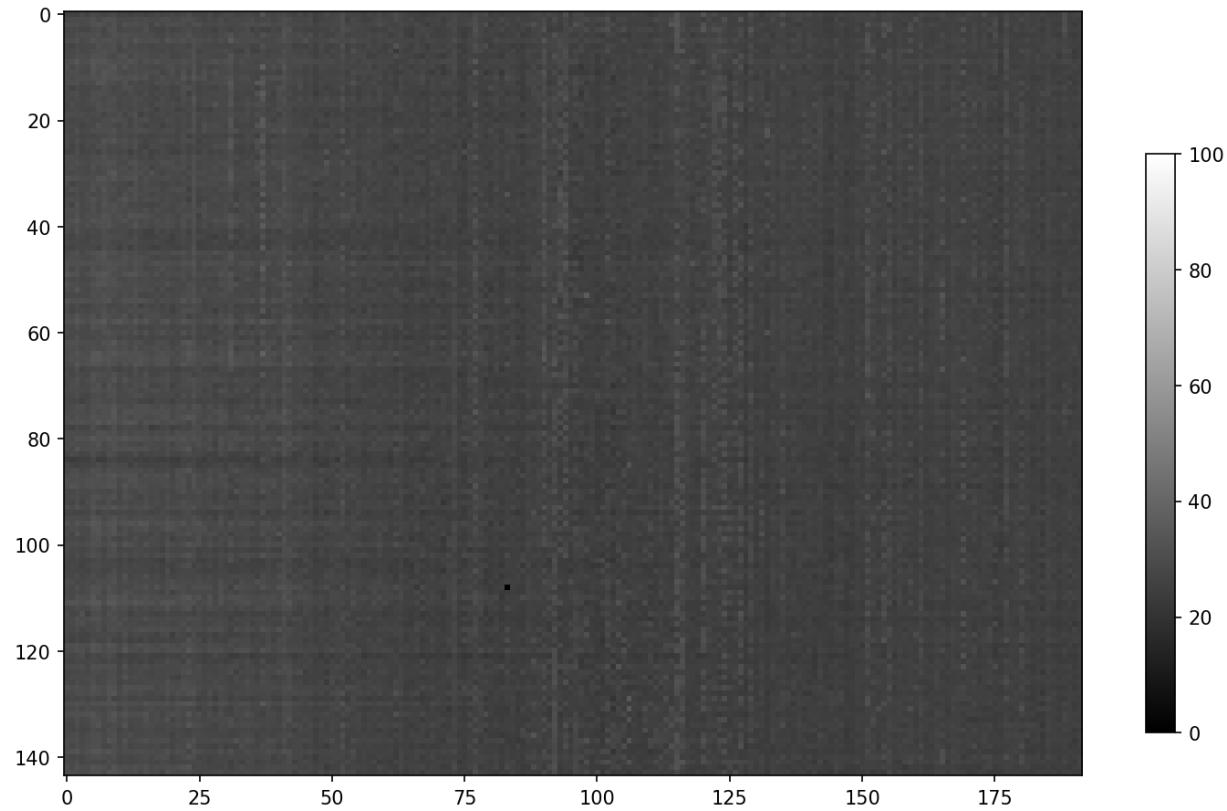
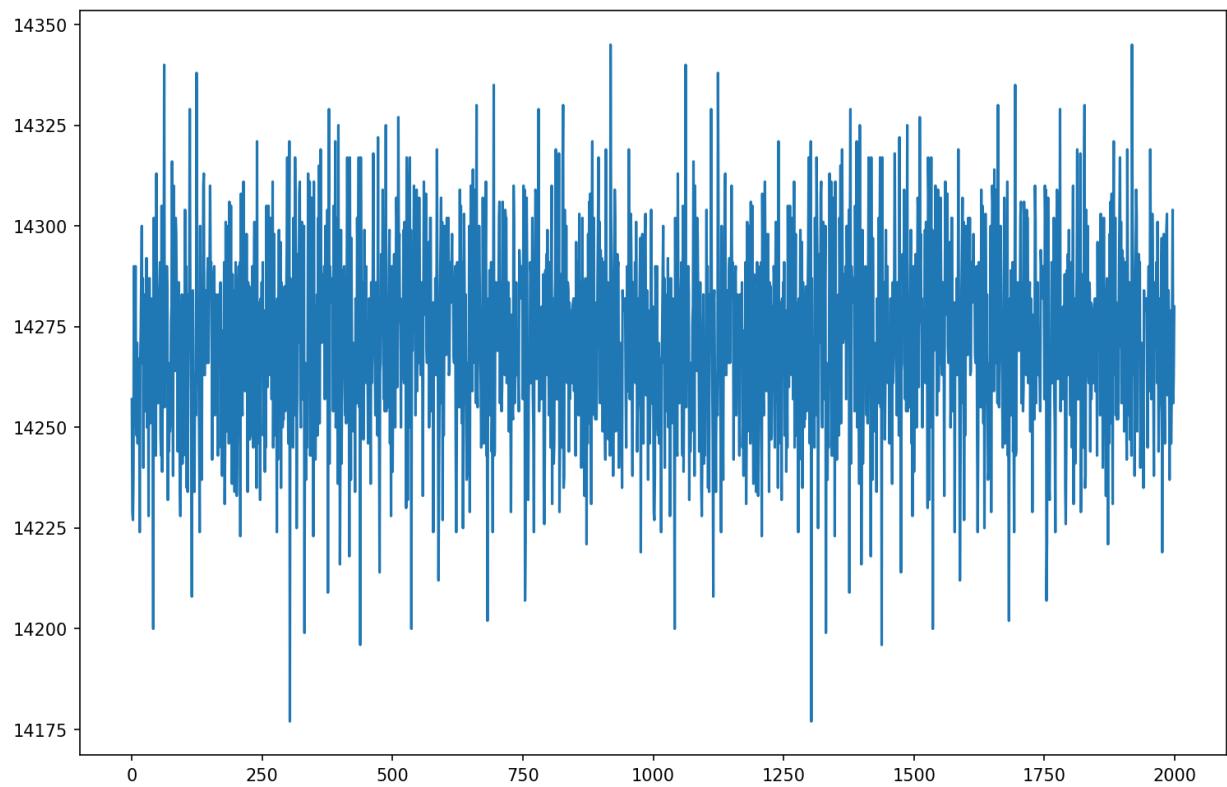
numberOfFrames in the 3D array: 1000

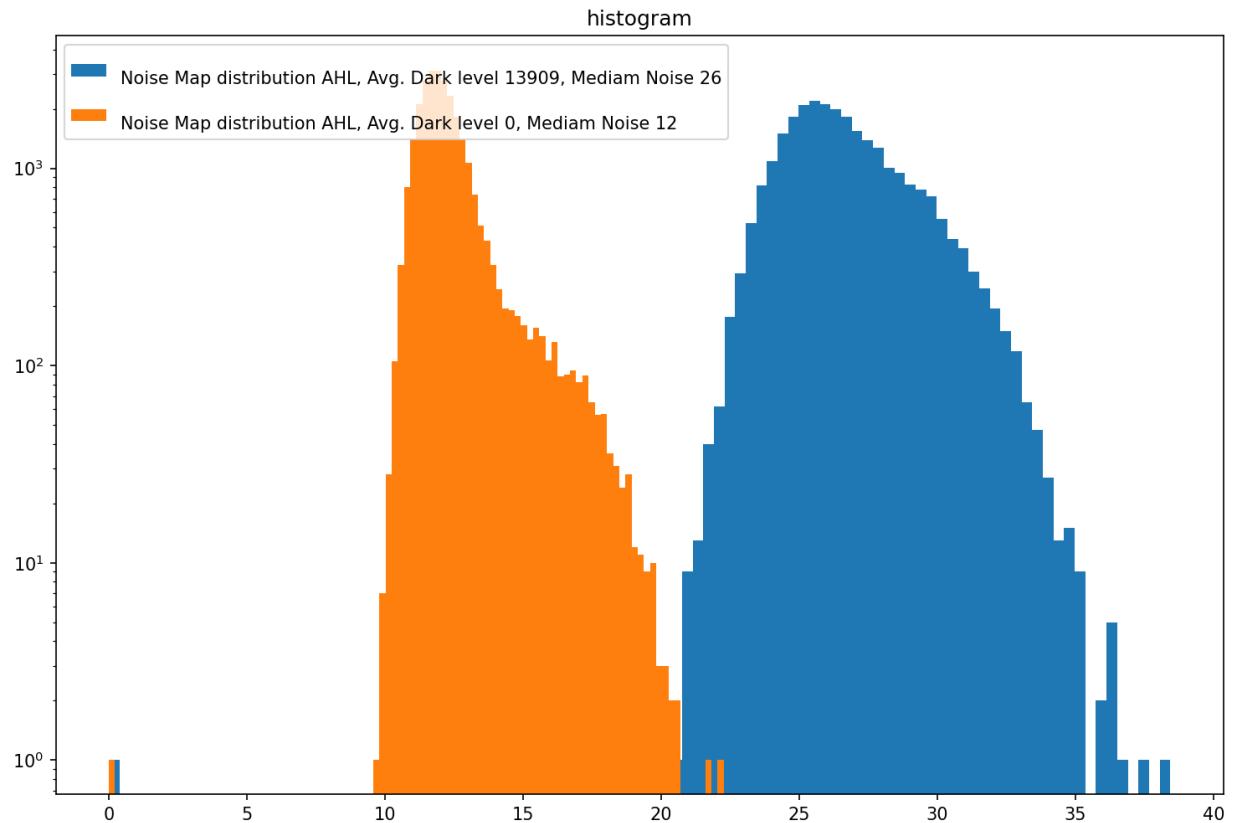
Starting descrambling images

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(144, 384)







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(2000, 144, 192)

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(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preamp_4_Vld1b_0_PixelCB_7_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

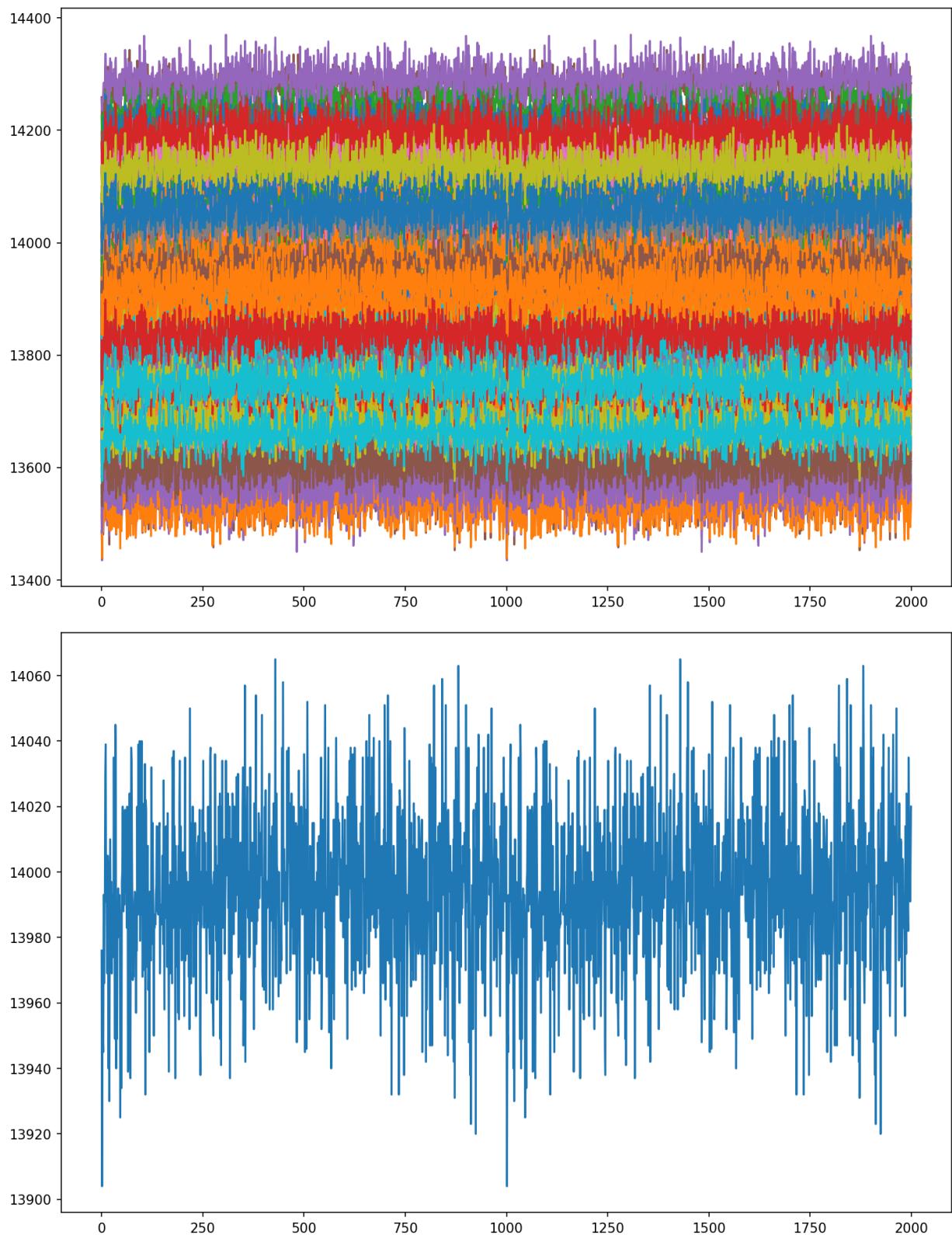
Read 1000 frames

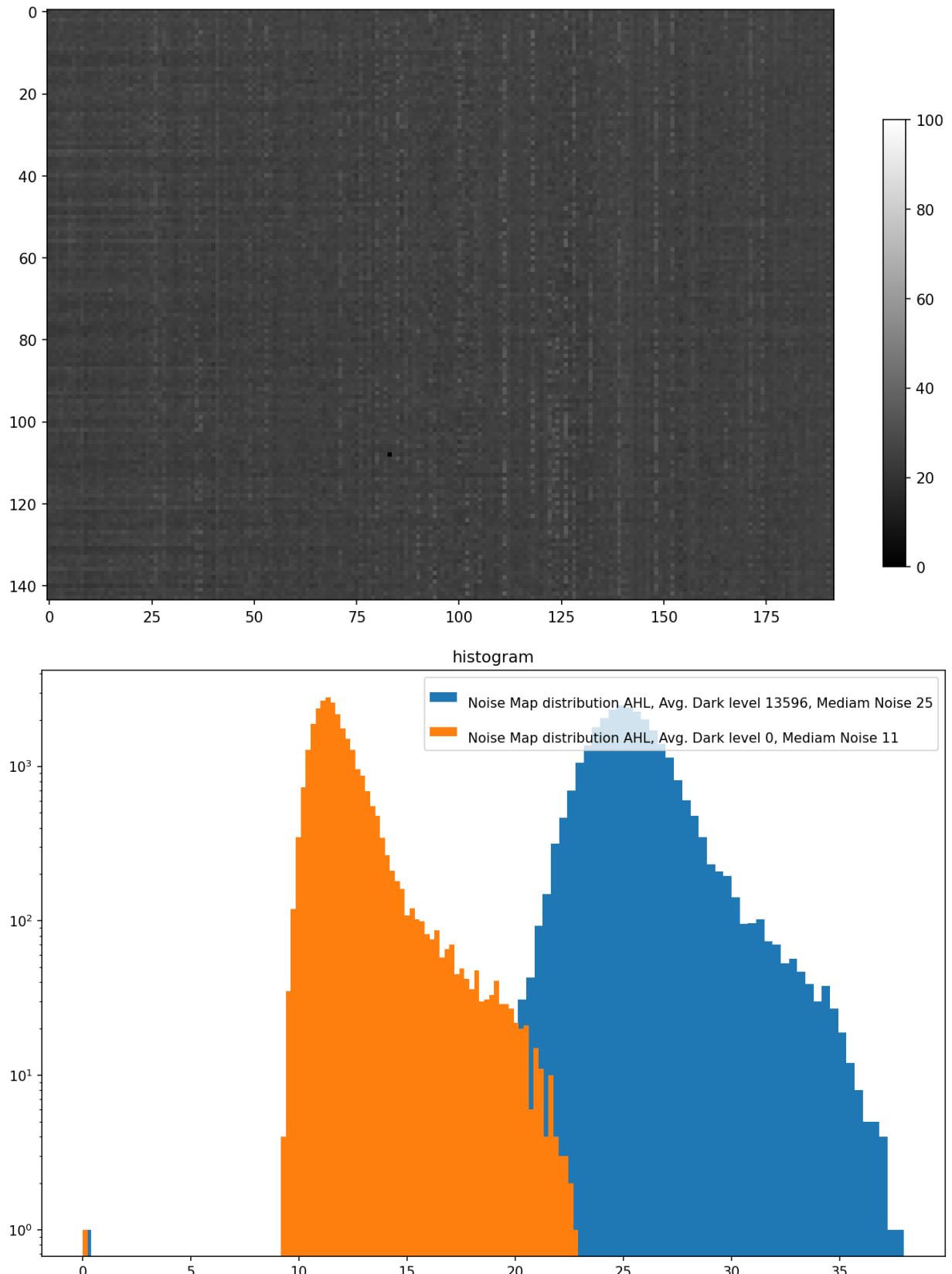
numberOfFrames in the 3D array: 1000

Starting descrambling images

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(144, 384)





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set_0_ePix10KTLCLS-IITiming_ASICv3_320MHz_noise-Analyses-ASIC2_WithStrongBack-HighGain

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(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz
_Preamp_3_Vld1b_0_PixelCB_7_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

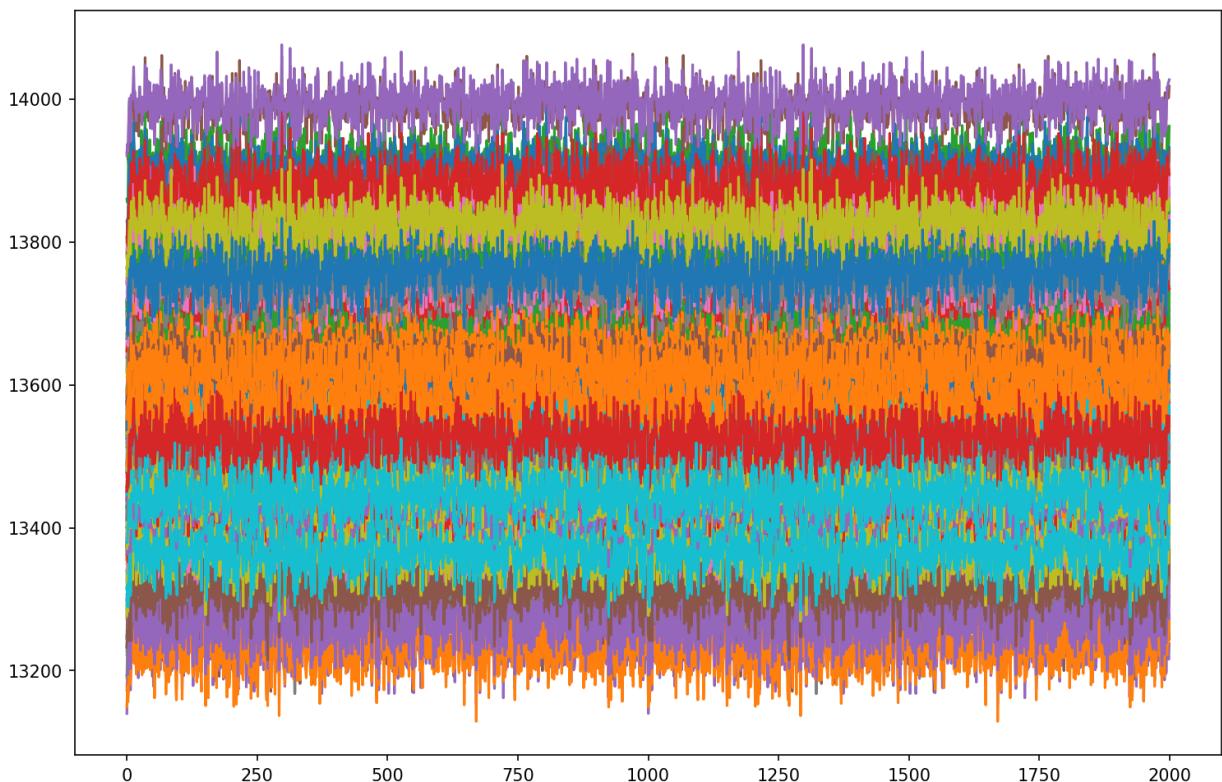
Read 1000 frames

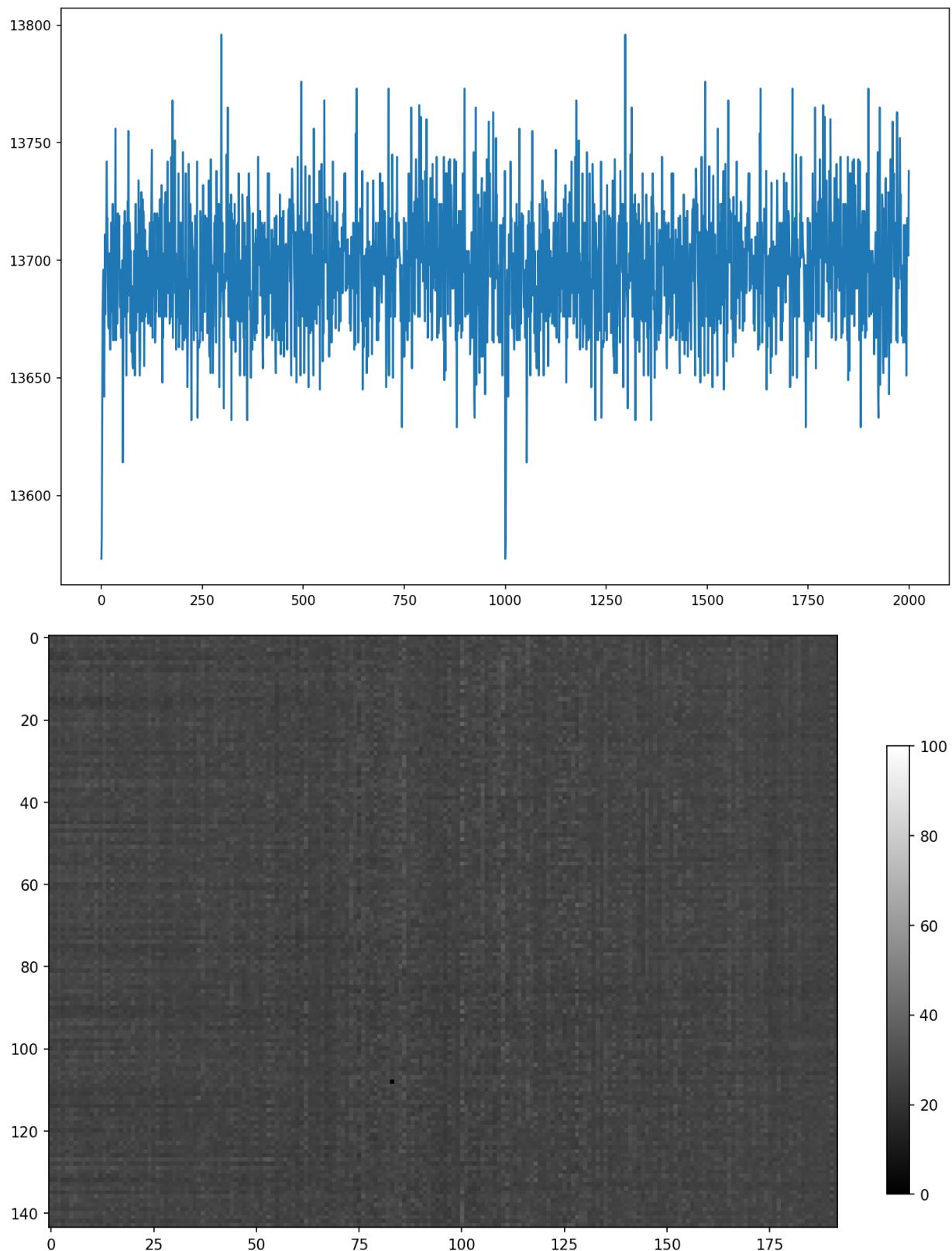
numberOfFrames in the 3D array: 1000

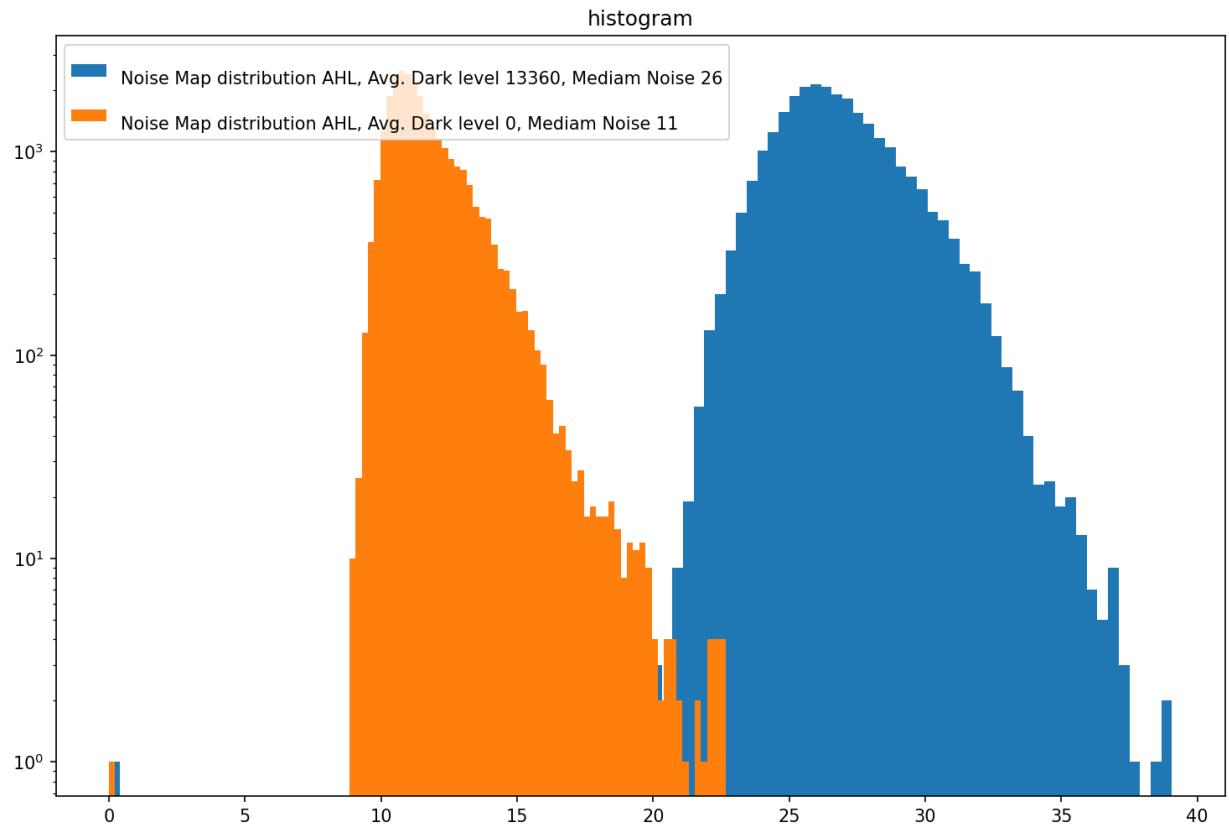
Starting descrambling images

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/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10KTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preampl_2_Vld1b_0_PixelCB_7_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

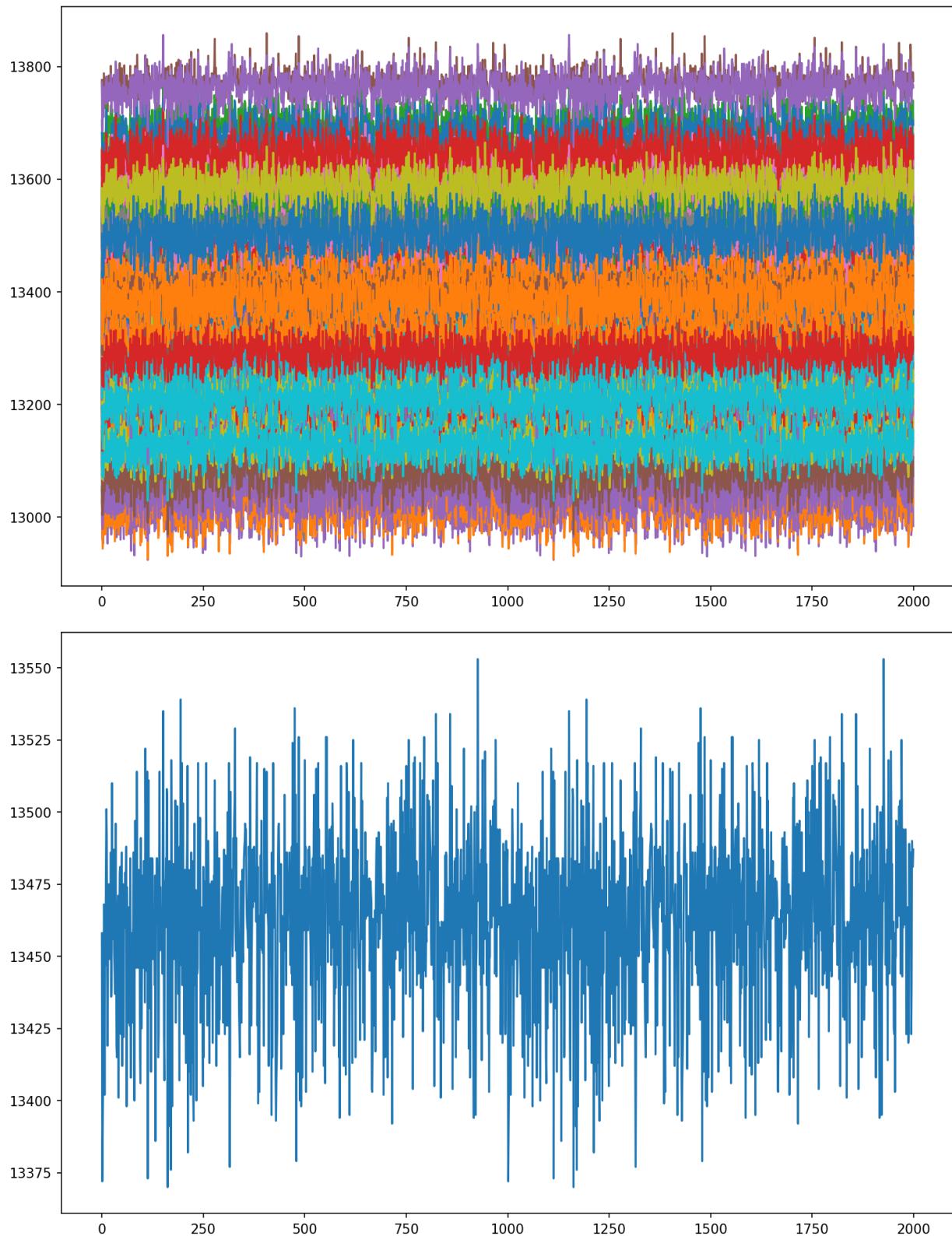
Read 1000 frames

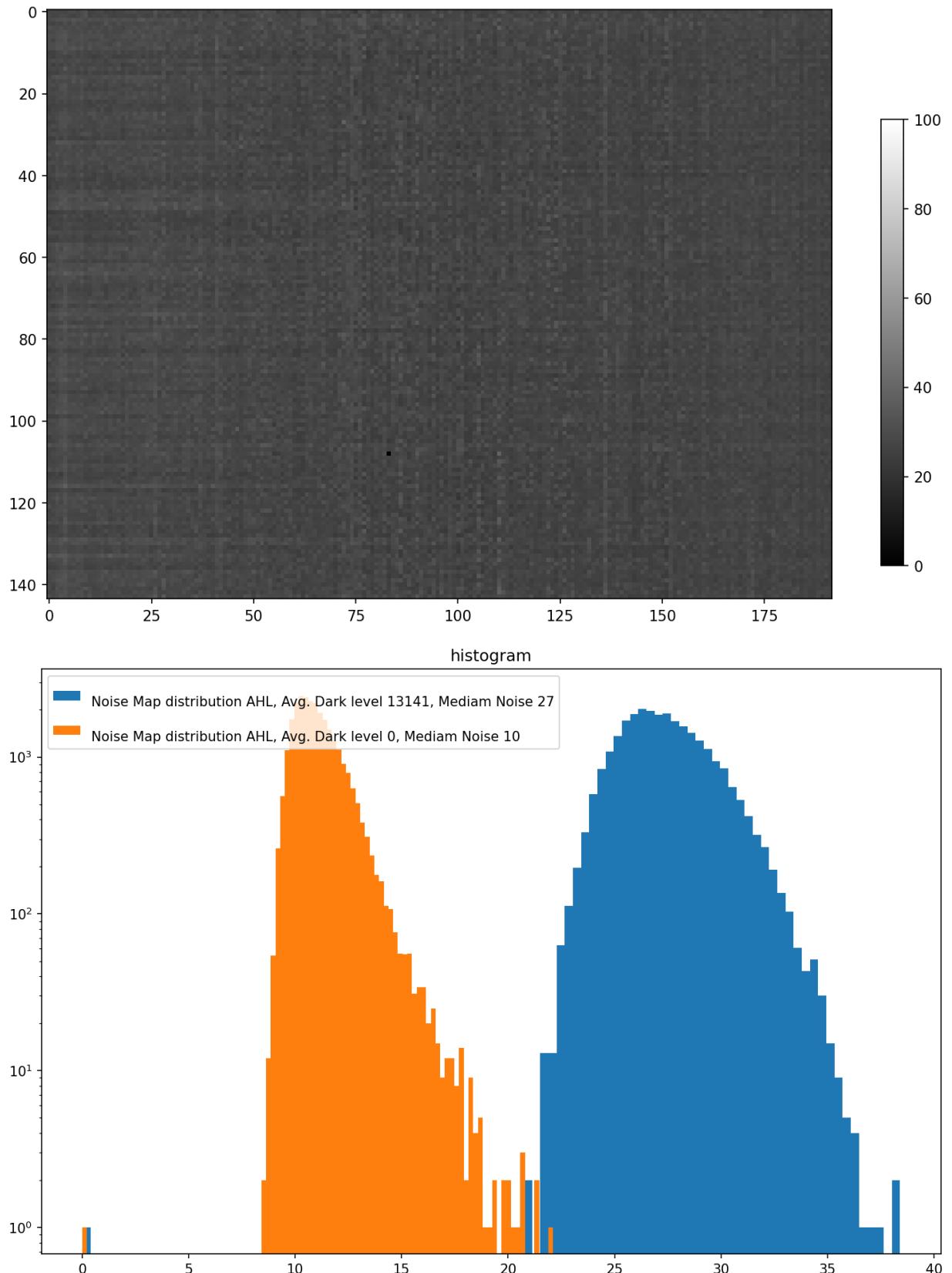
numberOfFrames in the 3D array: 1000

Starting descrambling images

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(144, 384)





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set_0_ePix10KTLCLS-IITiming_ASICv3_320MHz_noise-Analyses-ASIC2_WithStrongBack-HighGain

(2000, 144, 384)

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(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz
_Preamp_1_Vld1b_0_PixelCB_7_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

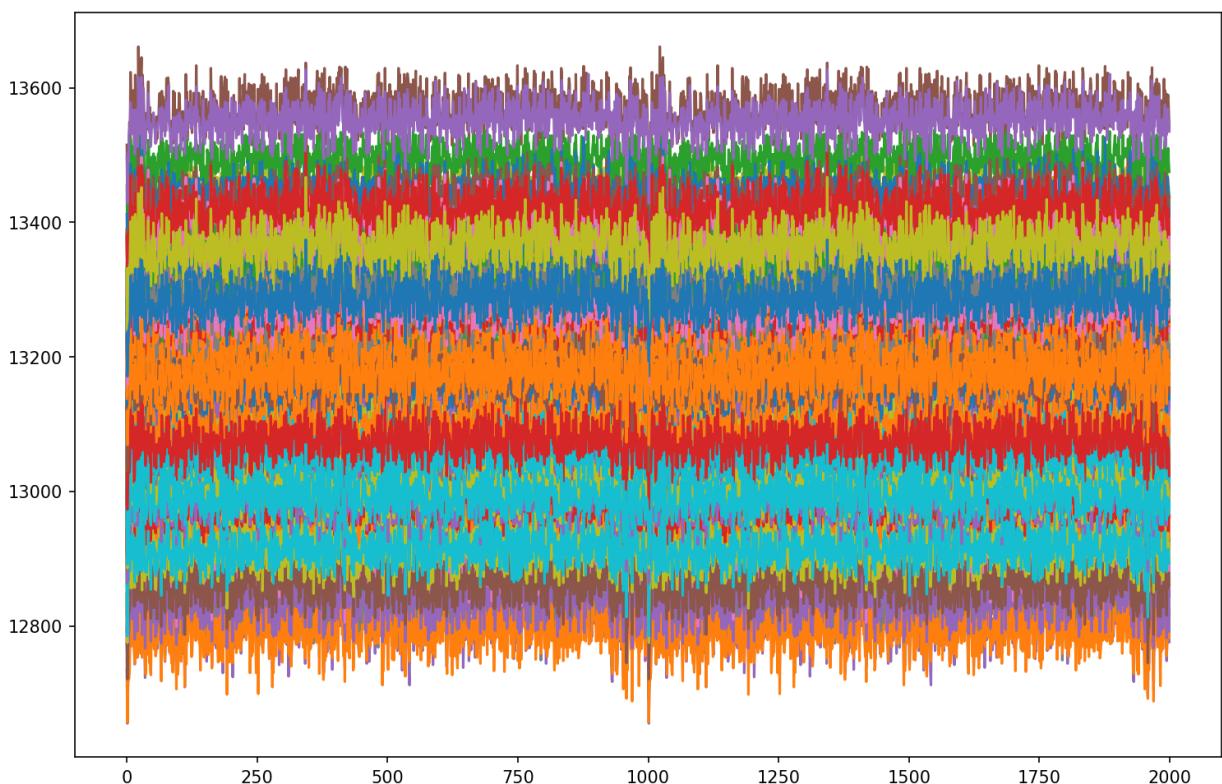
Read 1000 frames

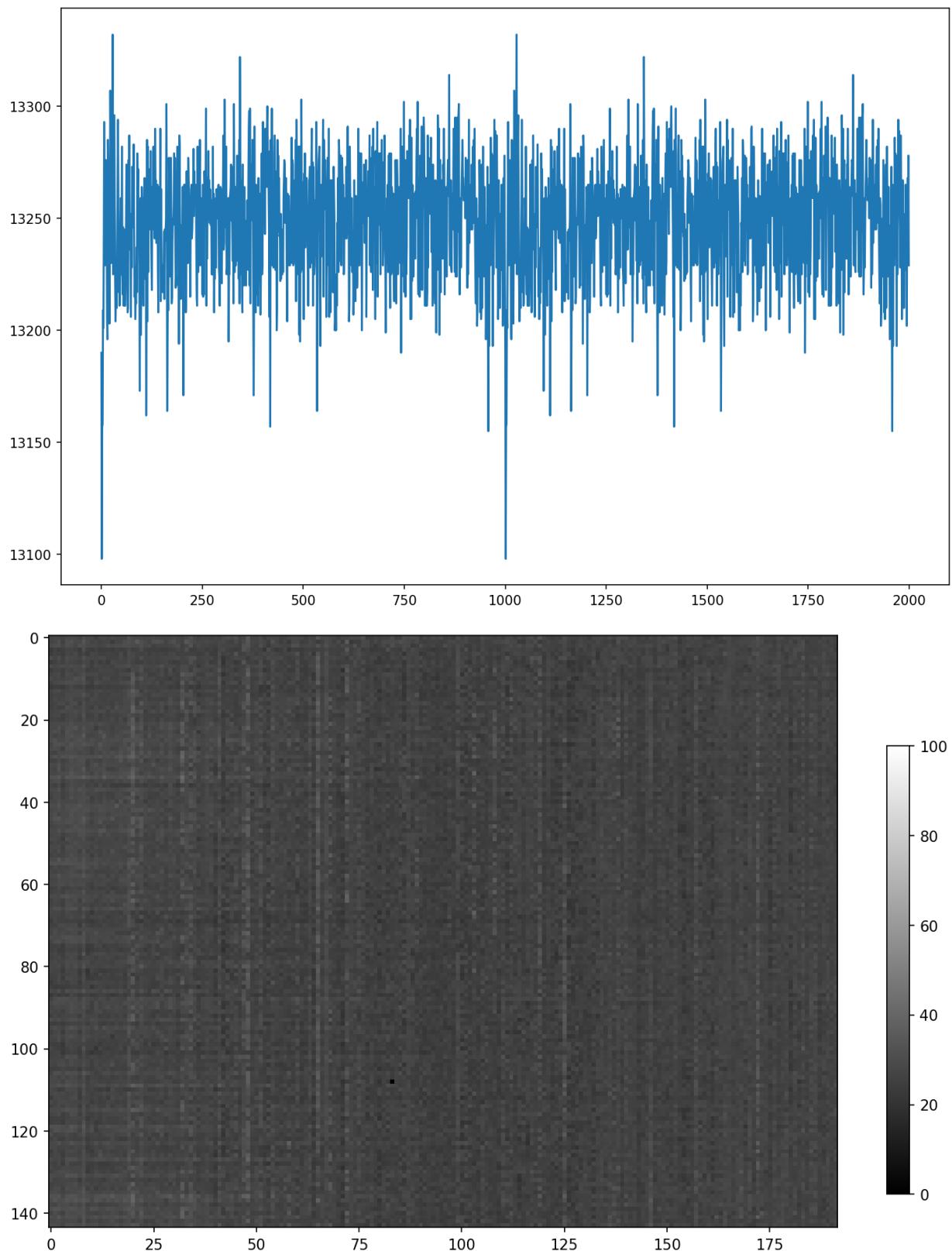
numberOfFrames in the 3D array: 1000

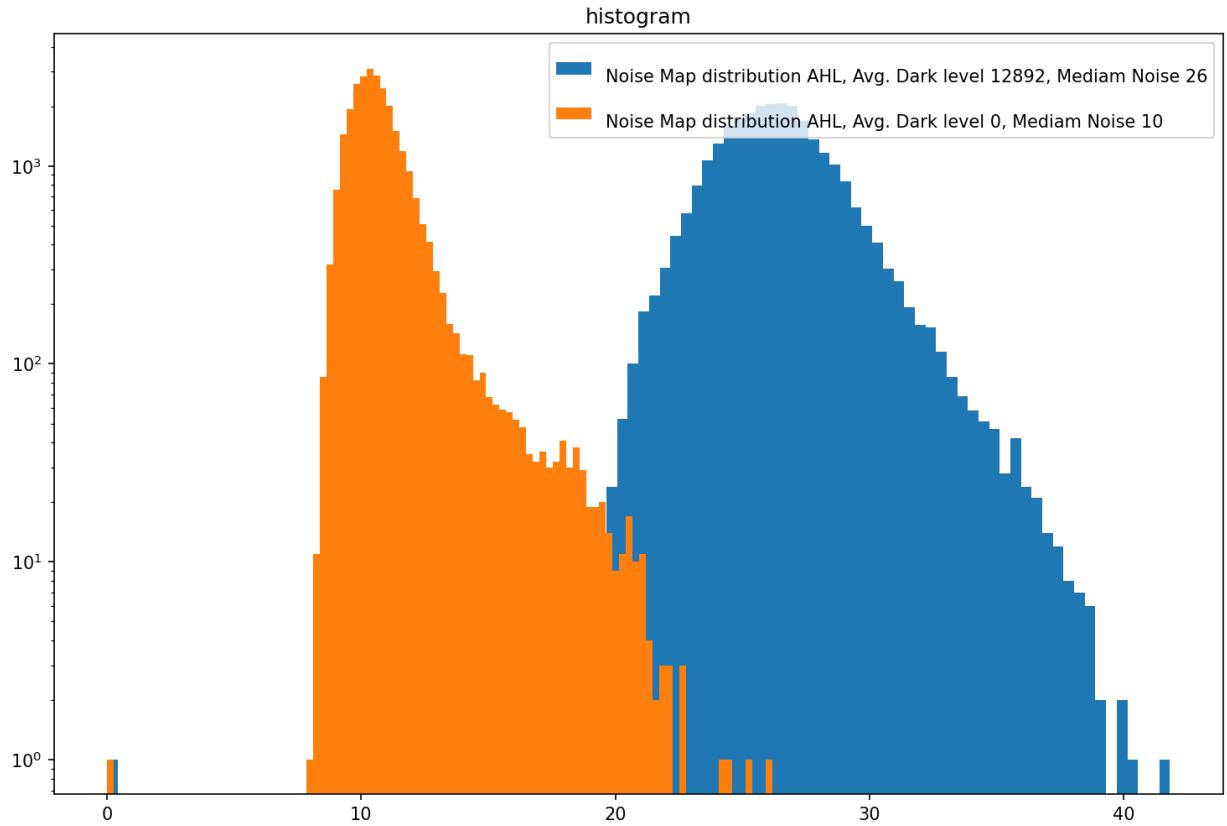
Starting descrambling images

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(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10KTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preampl_0_Vld1b_0_PixelCB_7_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

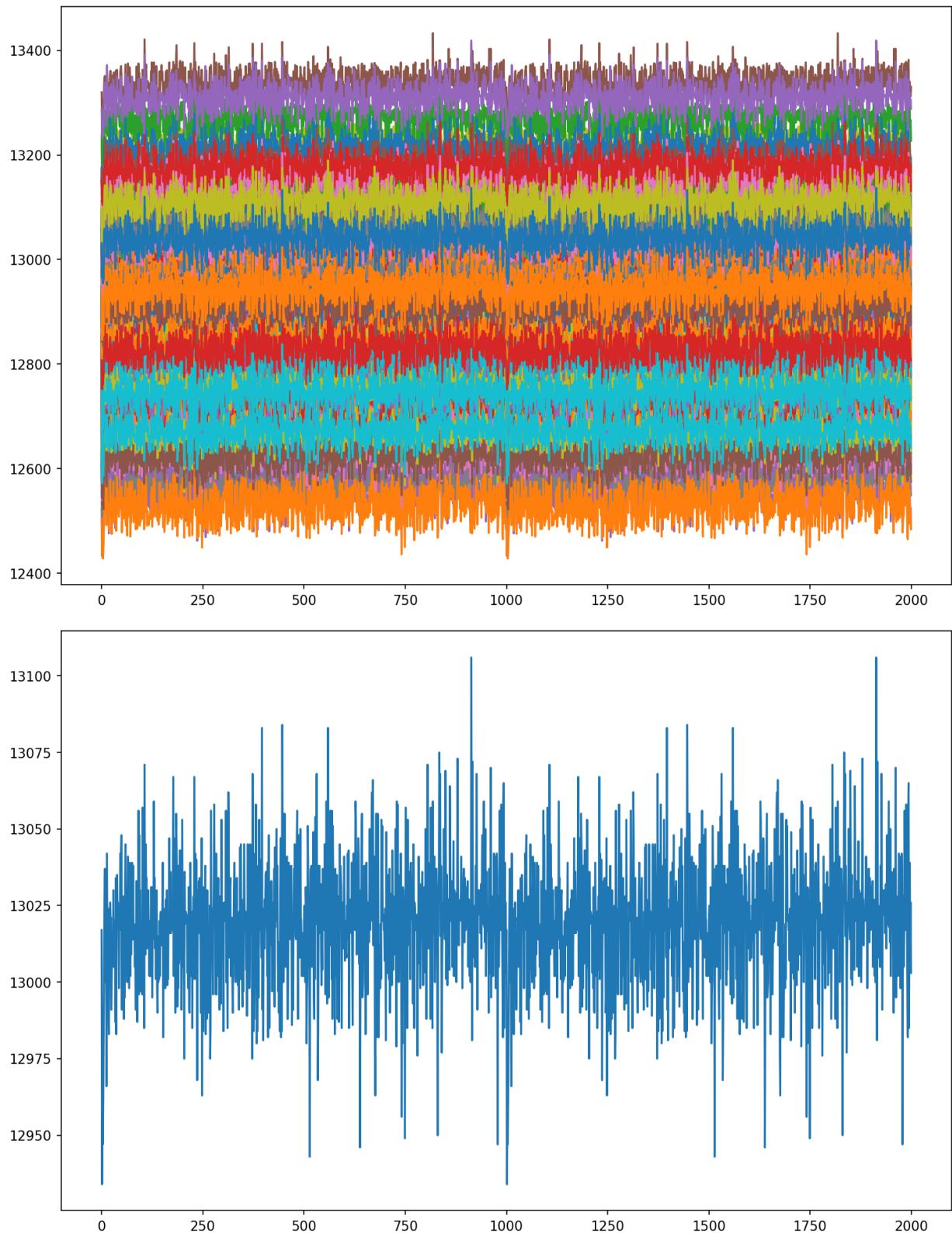
Read 1000 frames

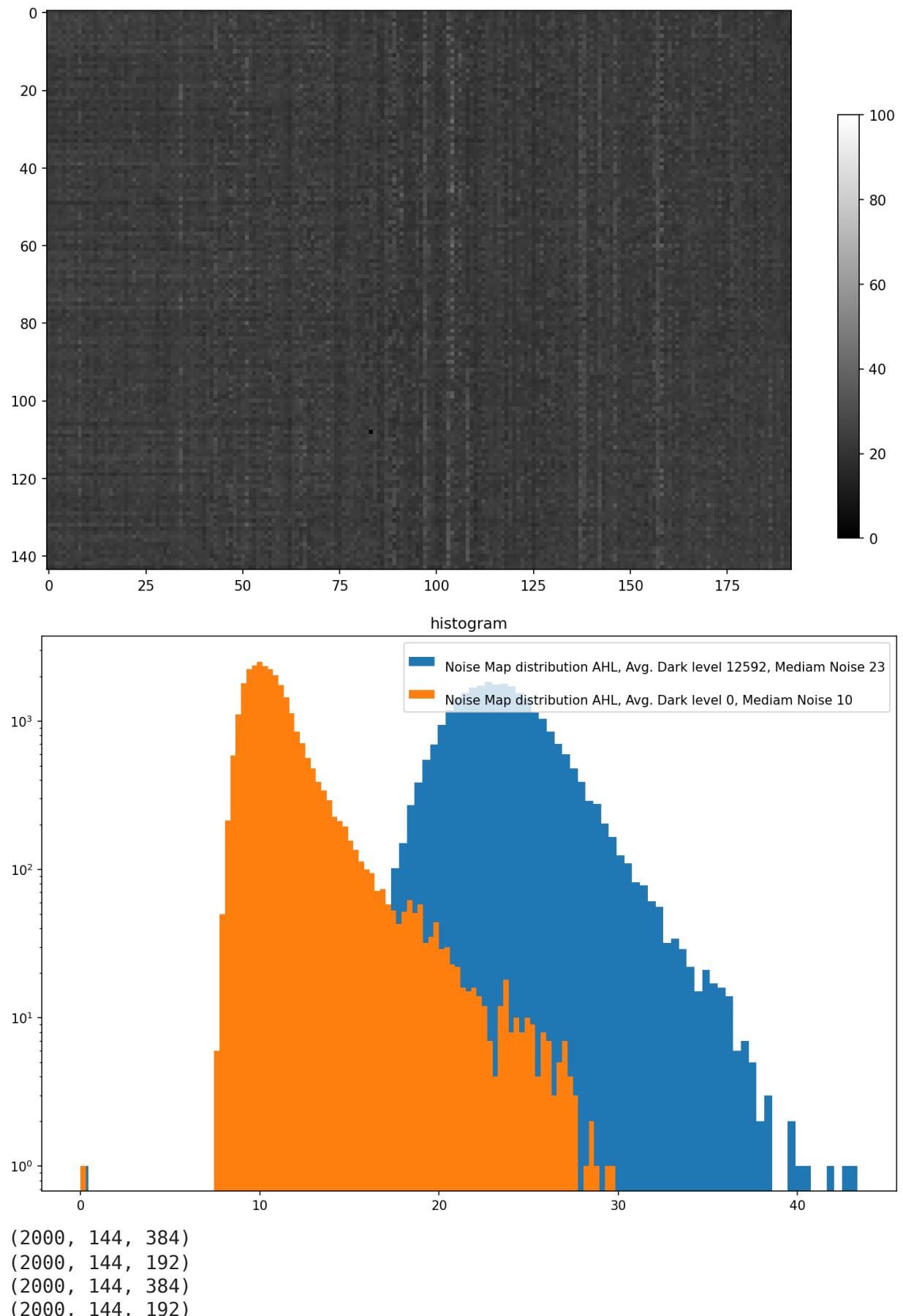
numberOfFrames in the 3D array: 1000

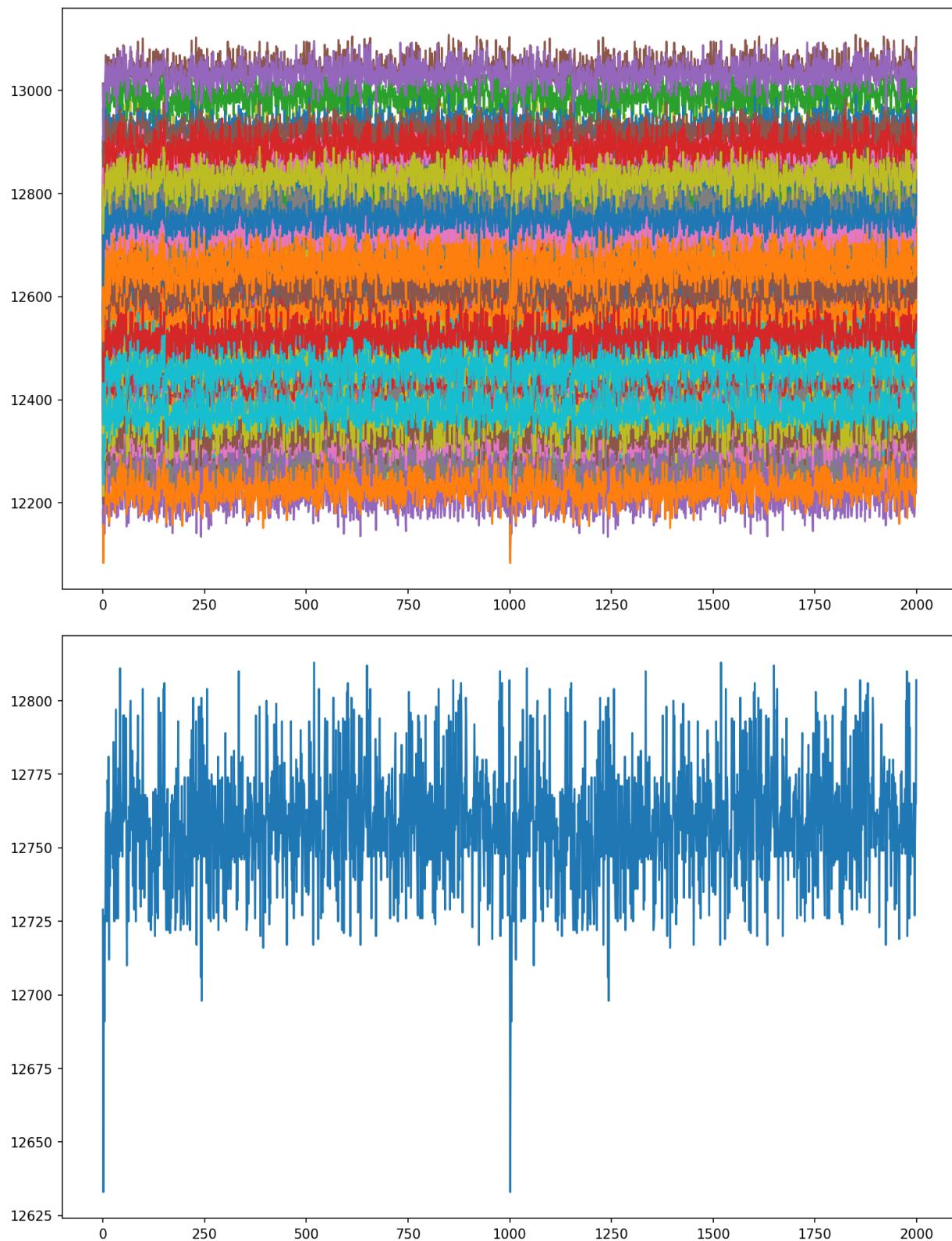
Starting descrambling images

(1000, 56088)

(144, 384)







```
In [24]: Preamp = 7
Vld1_bList = [0,1,2,3]
Pixel_CB= 7
Filter_DAC= 17
VRef_DAC = 58

for Vld1_b in Vld1_bList:
    #####
```

```
# Remove previous dataset
filename = (f'/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_#####
##### imgDesc = read_asic_test()
##### [noiseMap, darkAvg] = noise_print(0)
```

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz

_Preamp_7_Vld1b_0_PixelCB_7_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

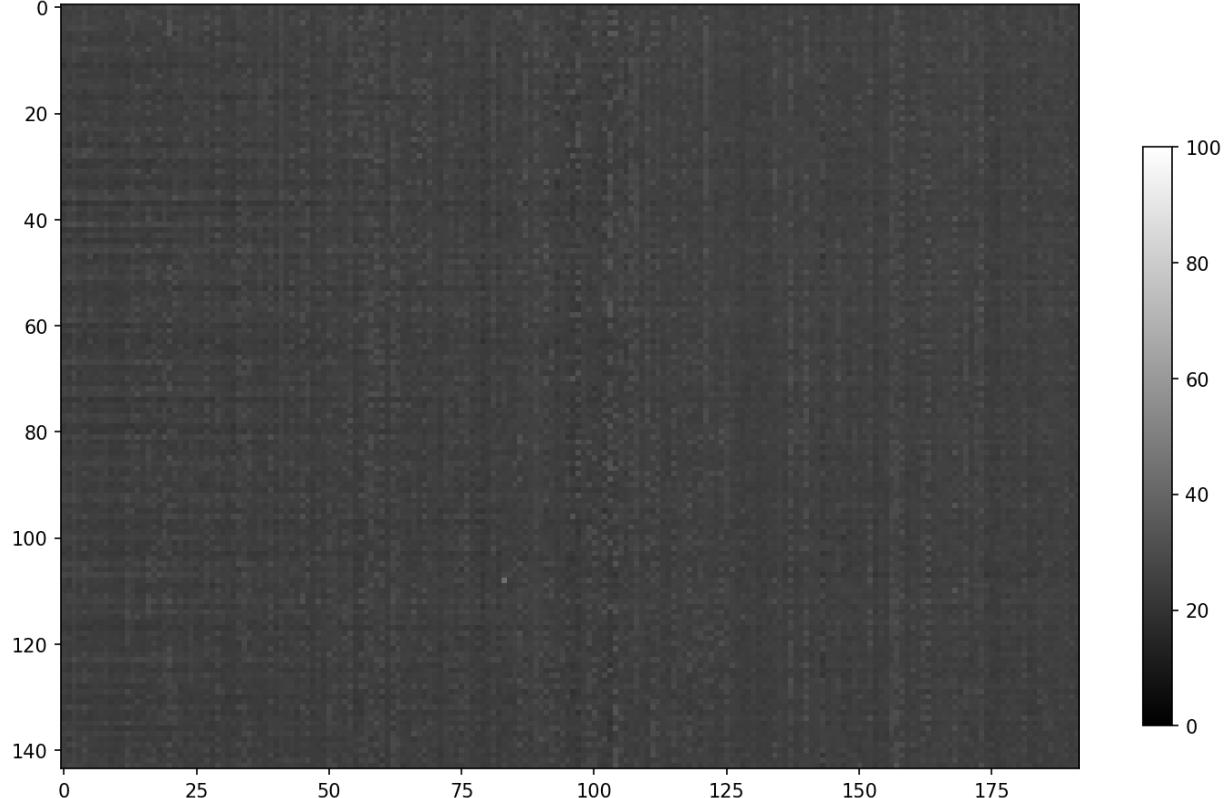
Read 1000 frames

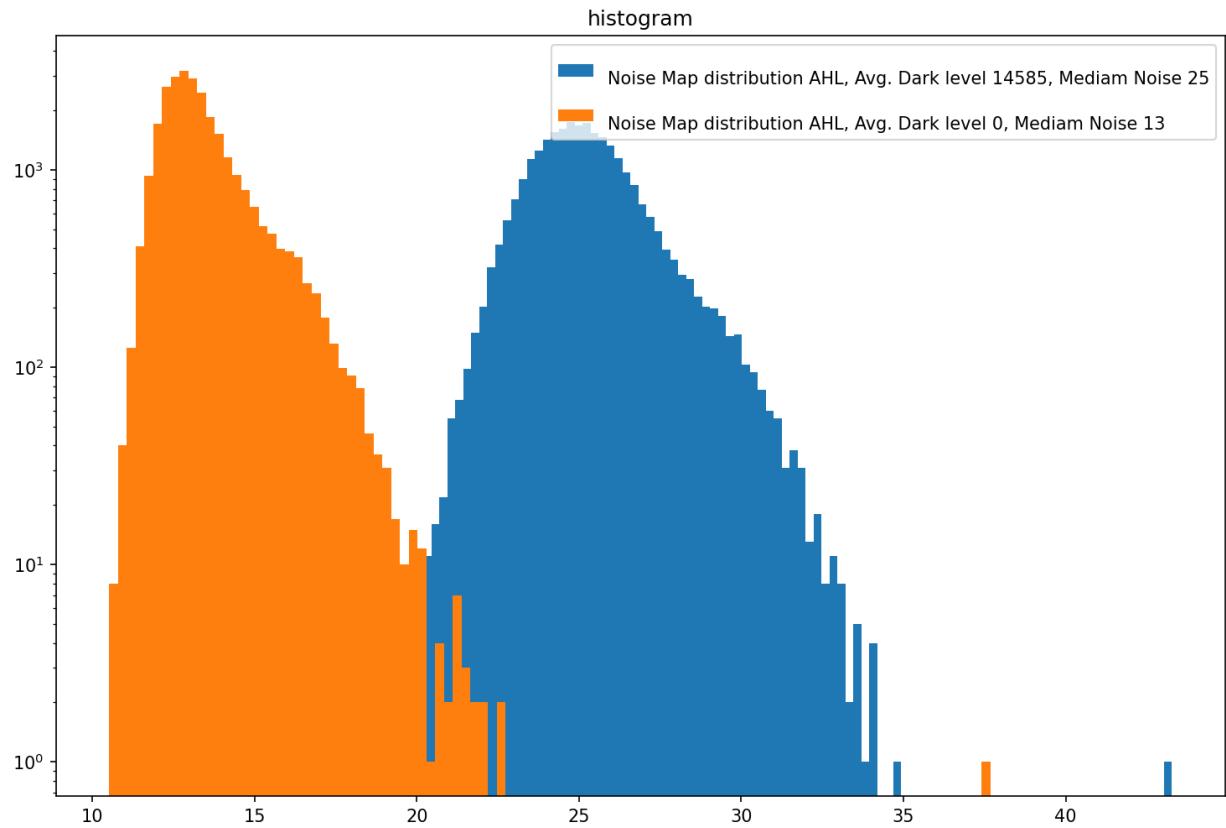
numberOfFrames in the 3D array: 1000

Starting descrambling images

(1000, 56088)

(144, 384)





(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10KTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preamp_7_Vld1b_1_PixelCB_7_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

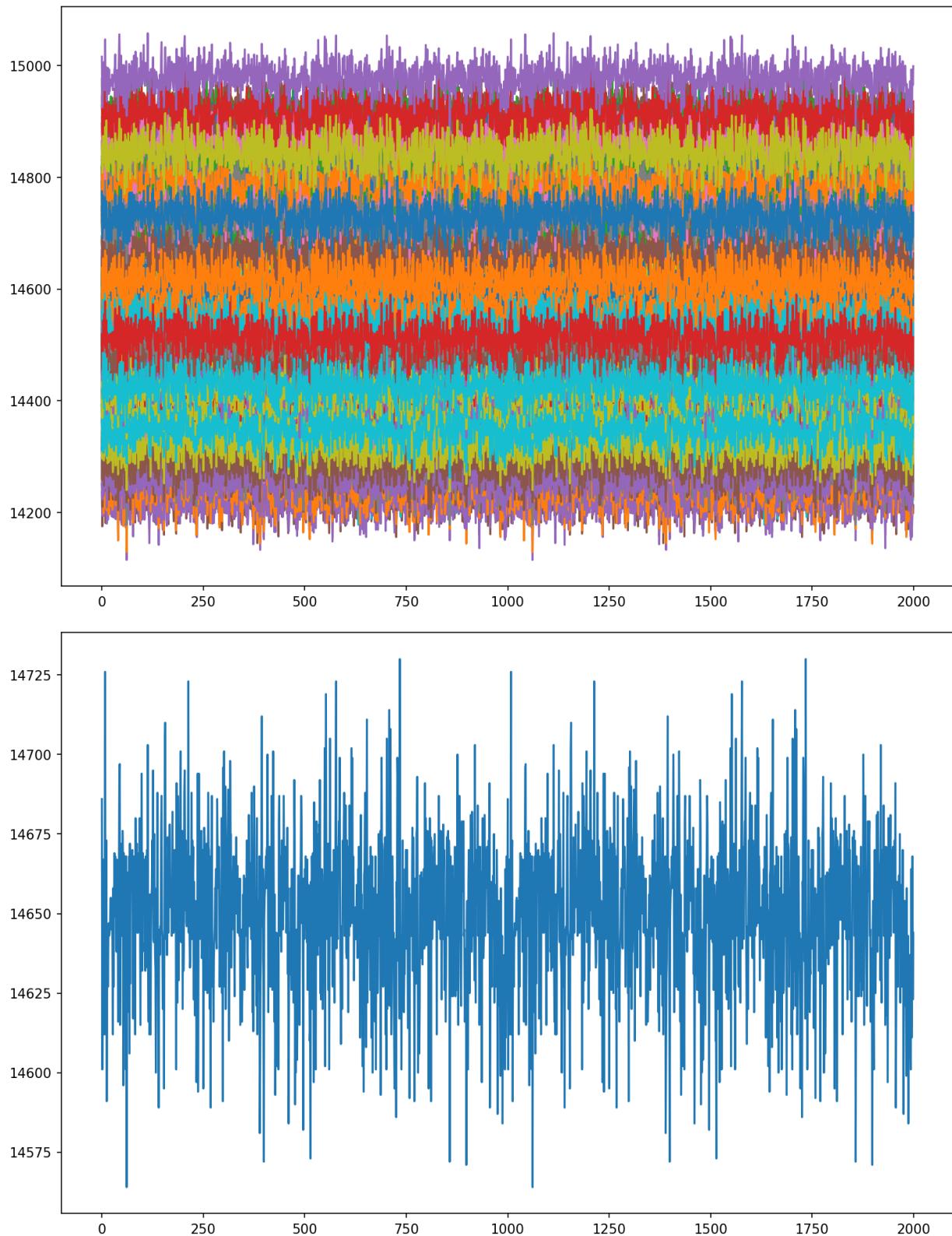
Read 1000 frames

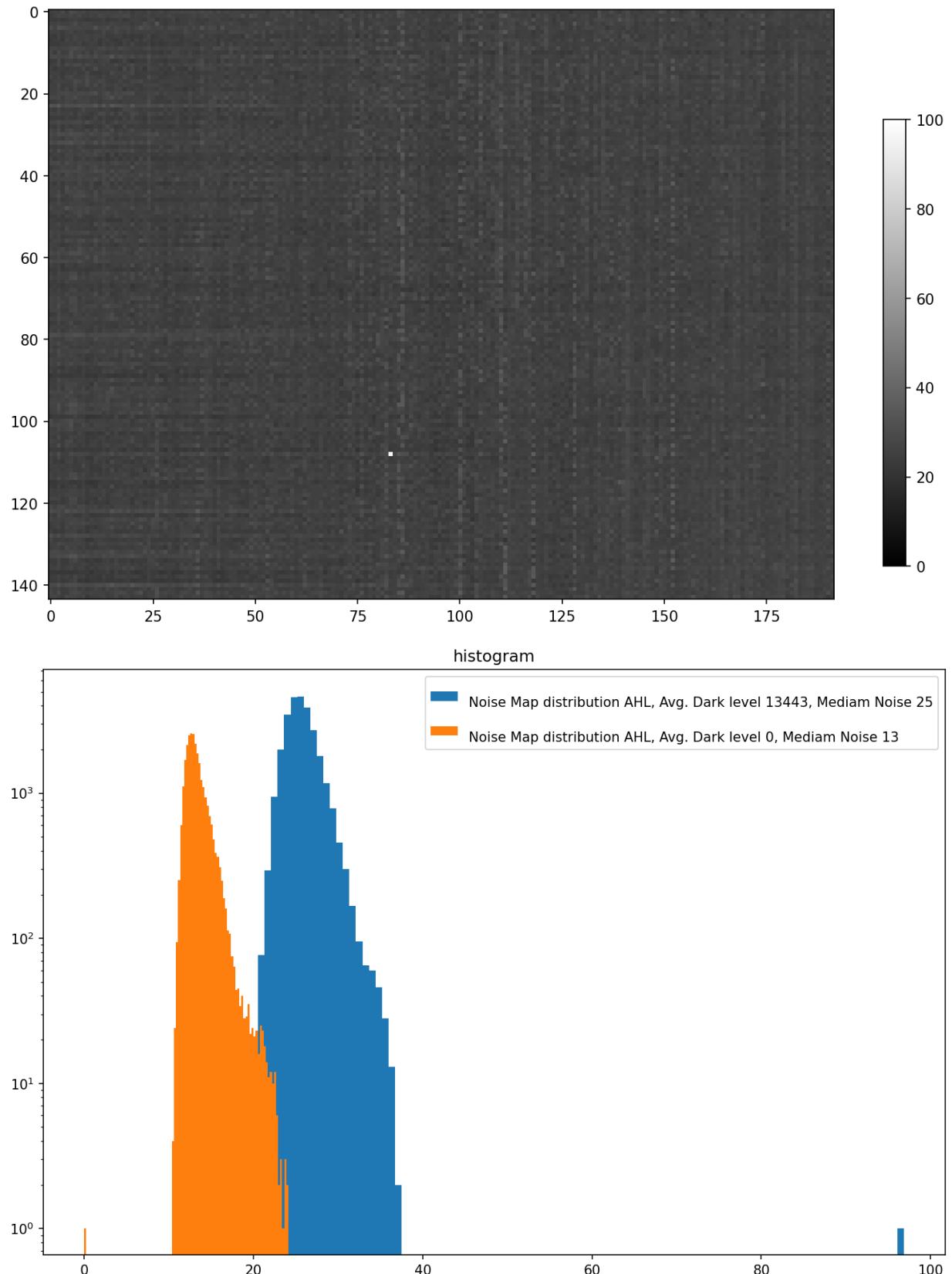
numberOfFrames in the 3D array: 1000

Starting descrambling images

(1000, 56088)

(144, 384)





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set_0_ePix10KTLCLS-IITiming_ASICv3_320MHz_noise-Analyses-ASIC2_WithStrongBack-HighGain

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(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz
_Preamp_7_Vld1b_2_PixelCB_7_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

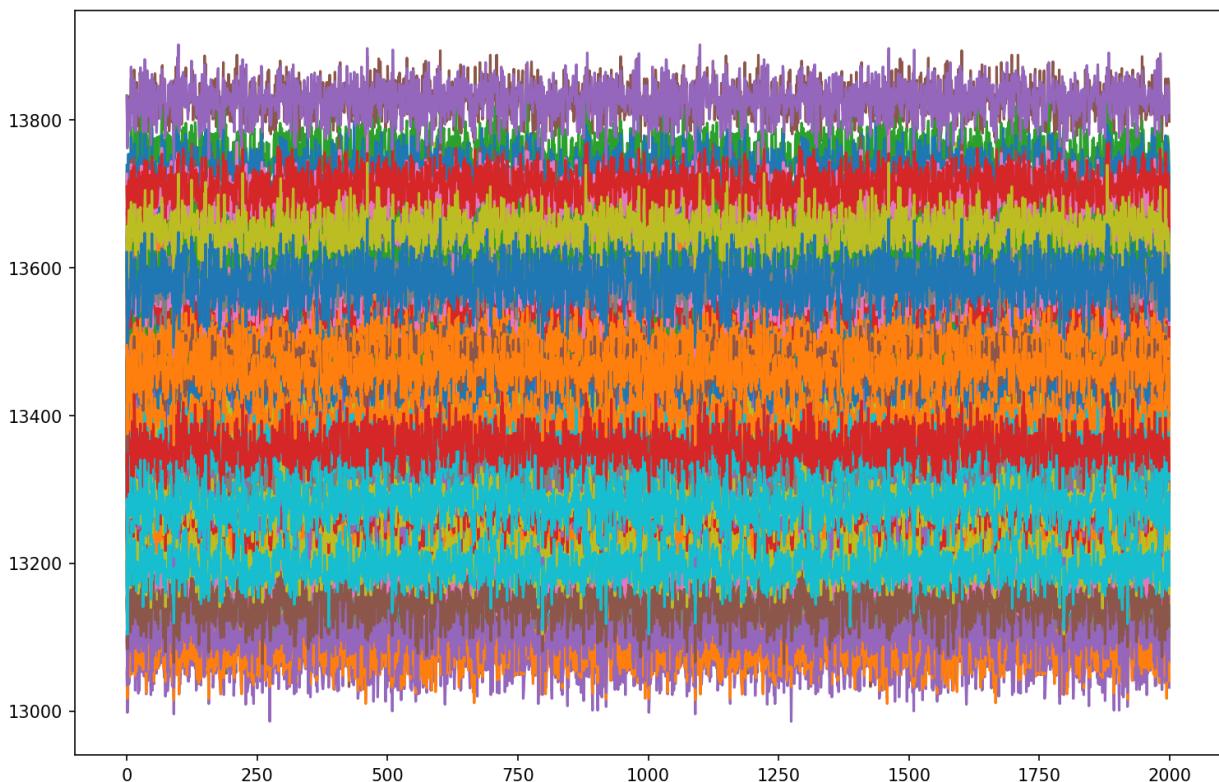
Read 1000 frames

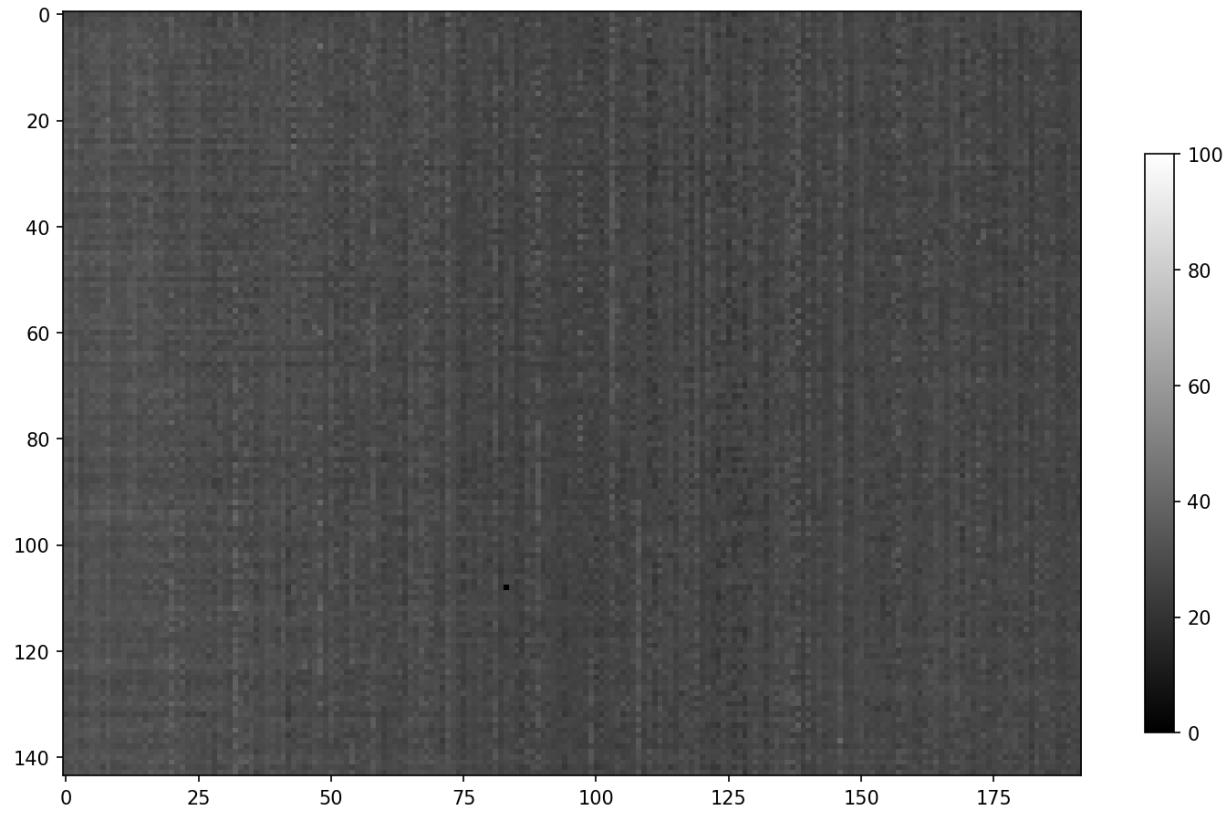
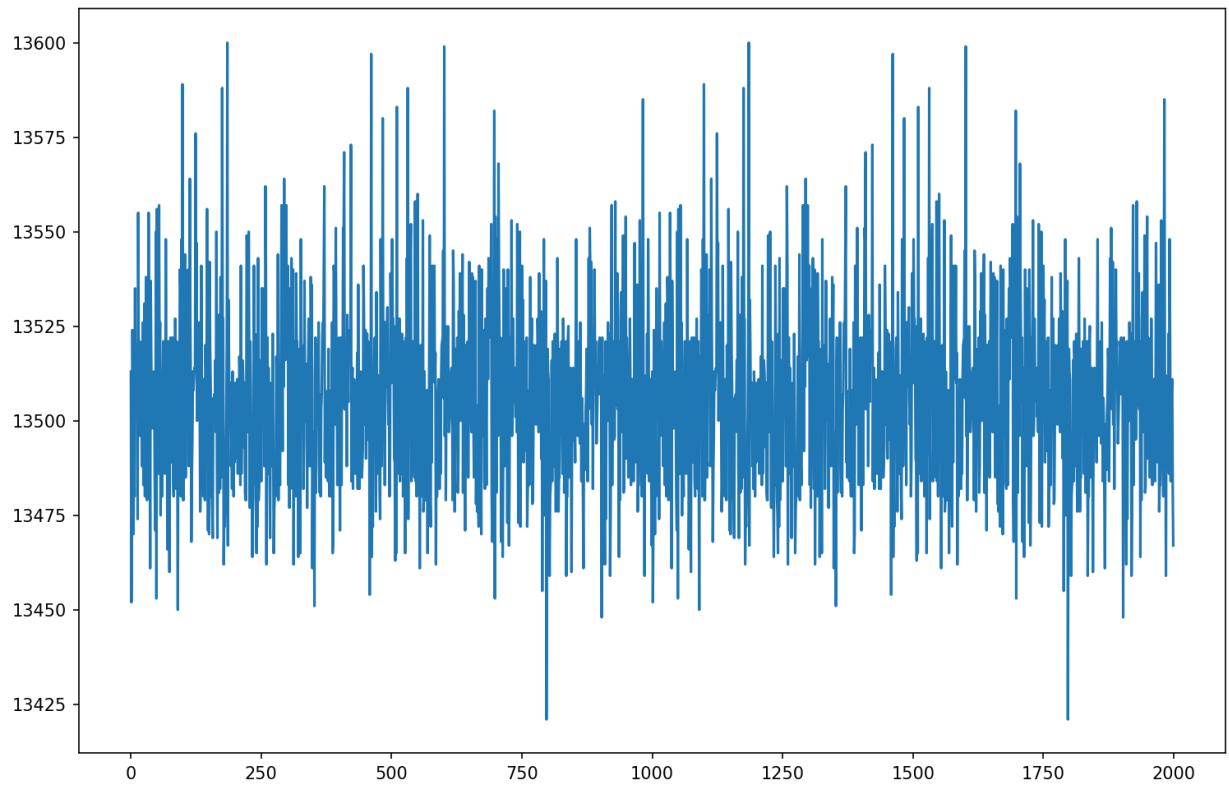
numberOfFrames in the 3D array: 1000

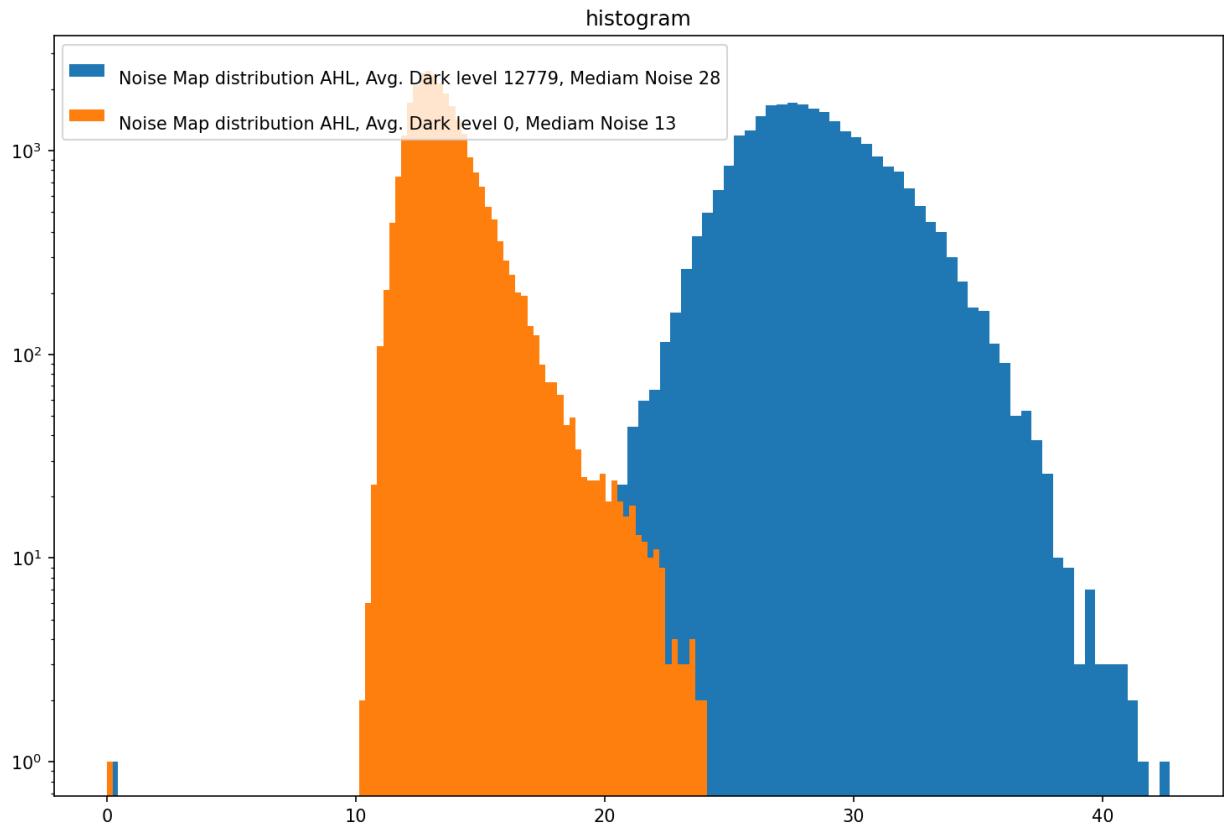
Starting descrambling images

(1000, 56088)

(144, 384)







(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10KTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preampl_7_Vld1b_3_PixelCB_7_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

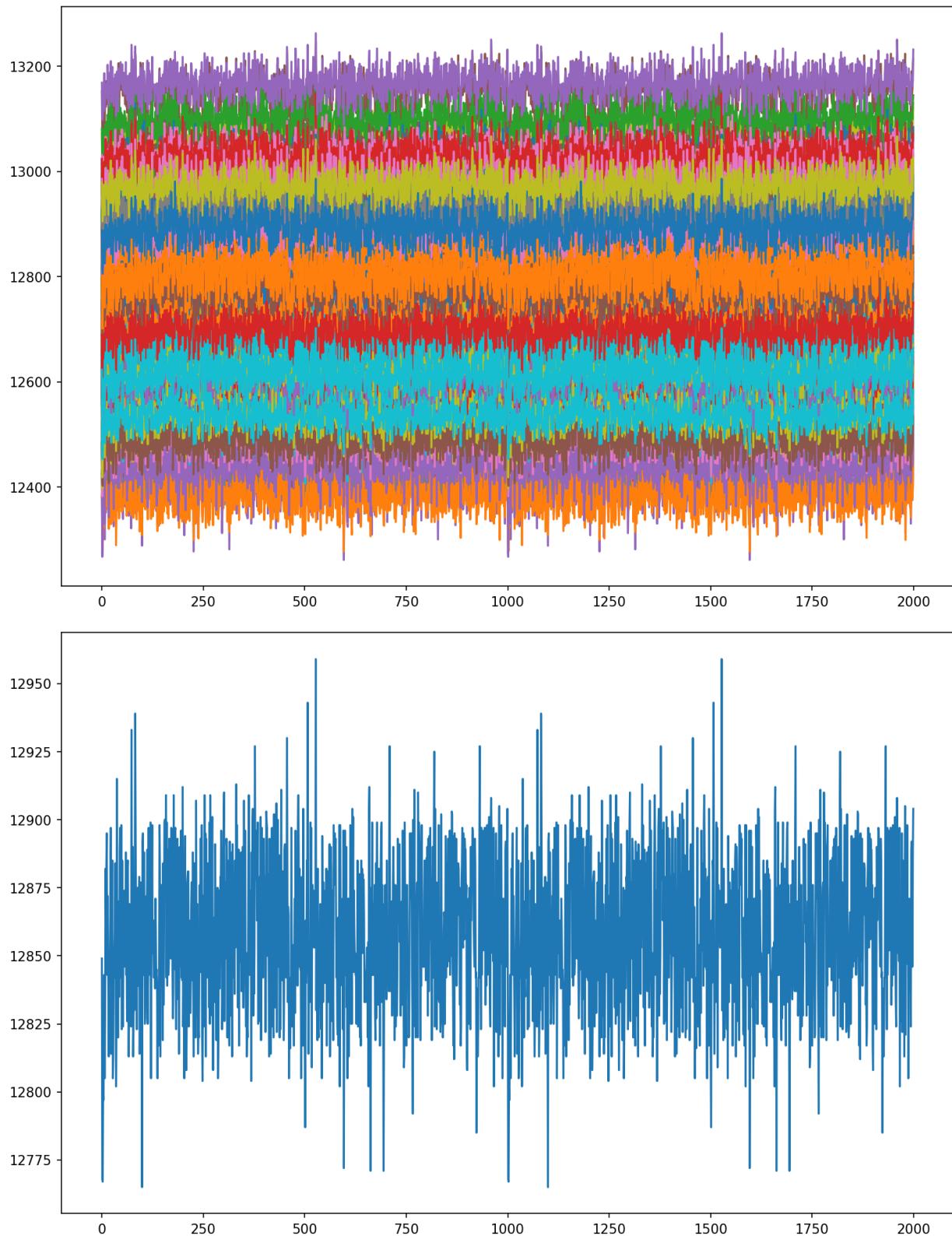
Read 1000 frames

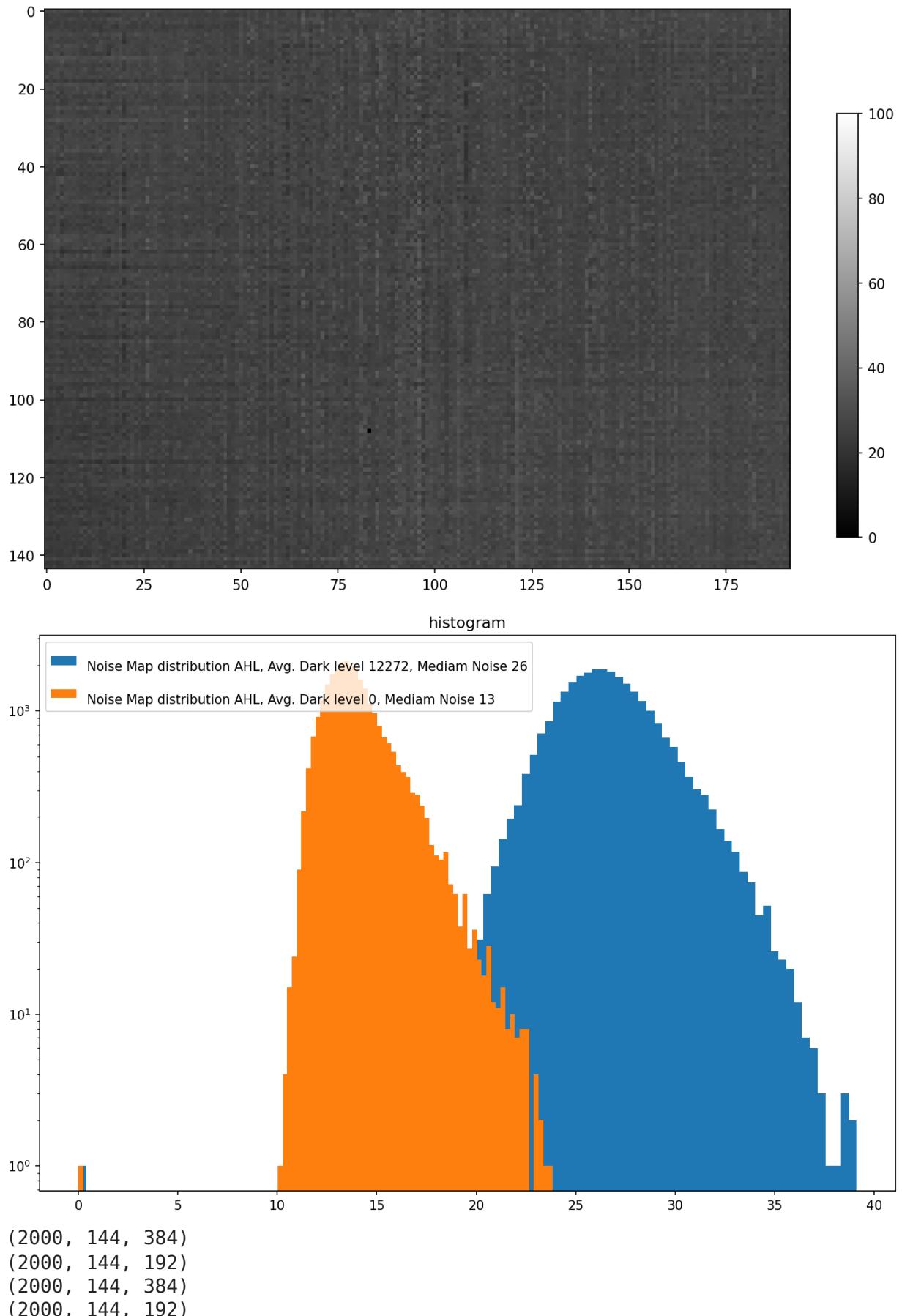
numberOfFrames in the 3D array: 1000

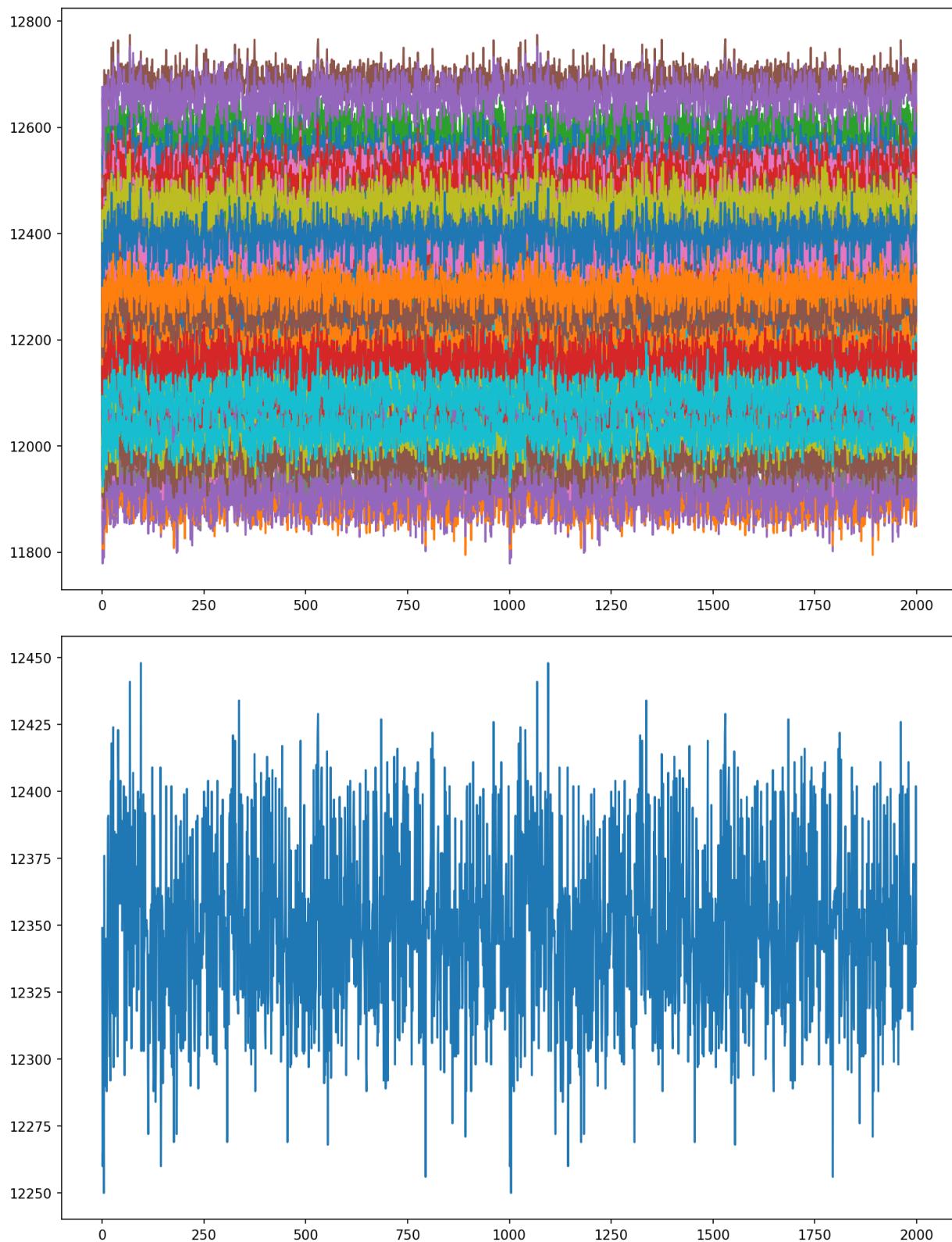
Starting descrambling images

(1000, 56088)

(144, 384)







```
In [29]: Preamp = 7
Vld1_b = 0
Pixel_CBLlist= [7,6,5,4,3,2,1,0]
Filter_DAC= 17
VRef_DAC = 58

for Pixel_CB in Pixel_CBLlist:
    #####
```

```
# Remove previous dataset
filename = (f'/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_#####
##### imgDesc = read_asic_test()
##### [noiseMap, darkAvg] = noise_print(0)
```

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preampl_7_Vld1b_0_PixelCB_7_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

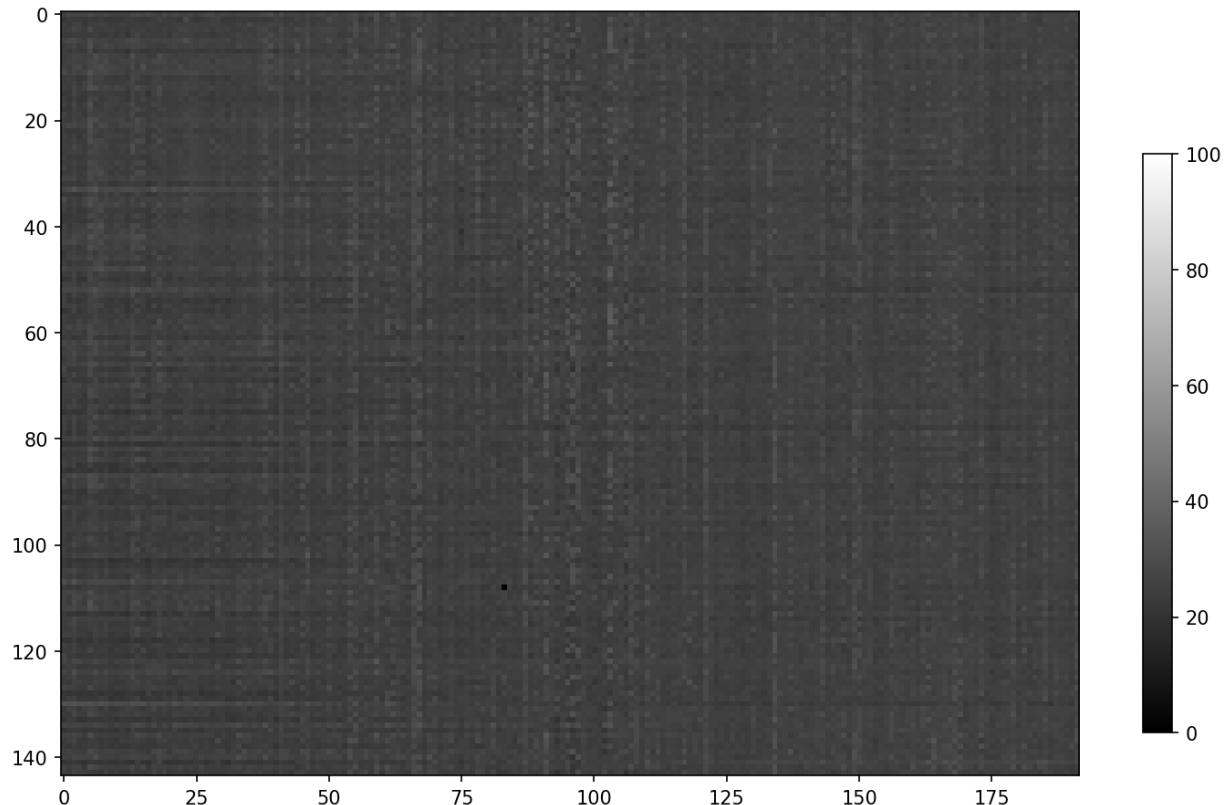
Read 1000 frames

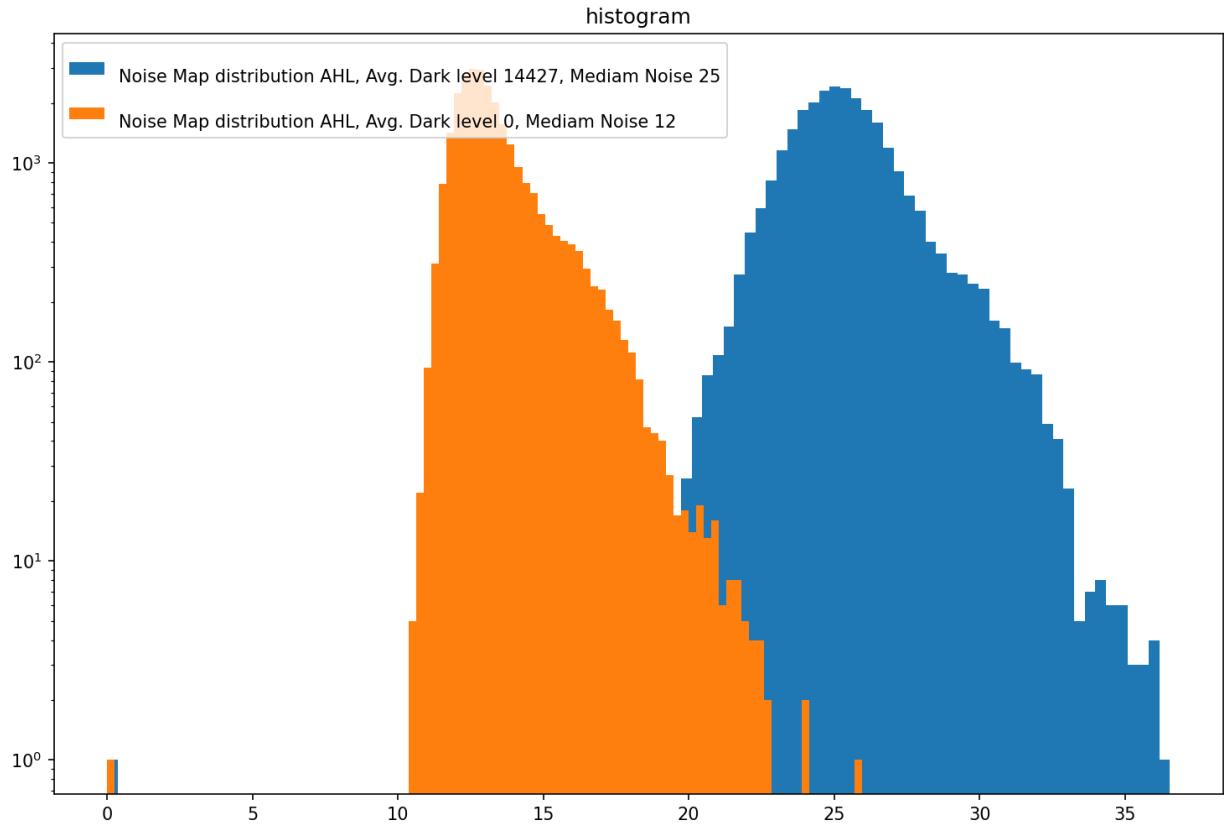
numberOffFrames in the 3D array: 1000

Starting descrambling images

(1000, 56088)

(144, 384)





(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preamp_7_Vld1b_0_PixelCB_6_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

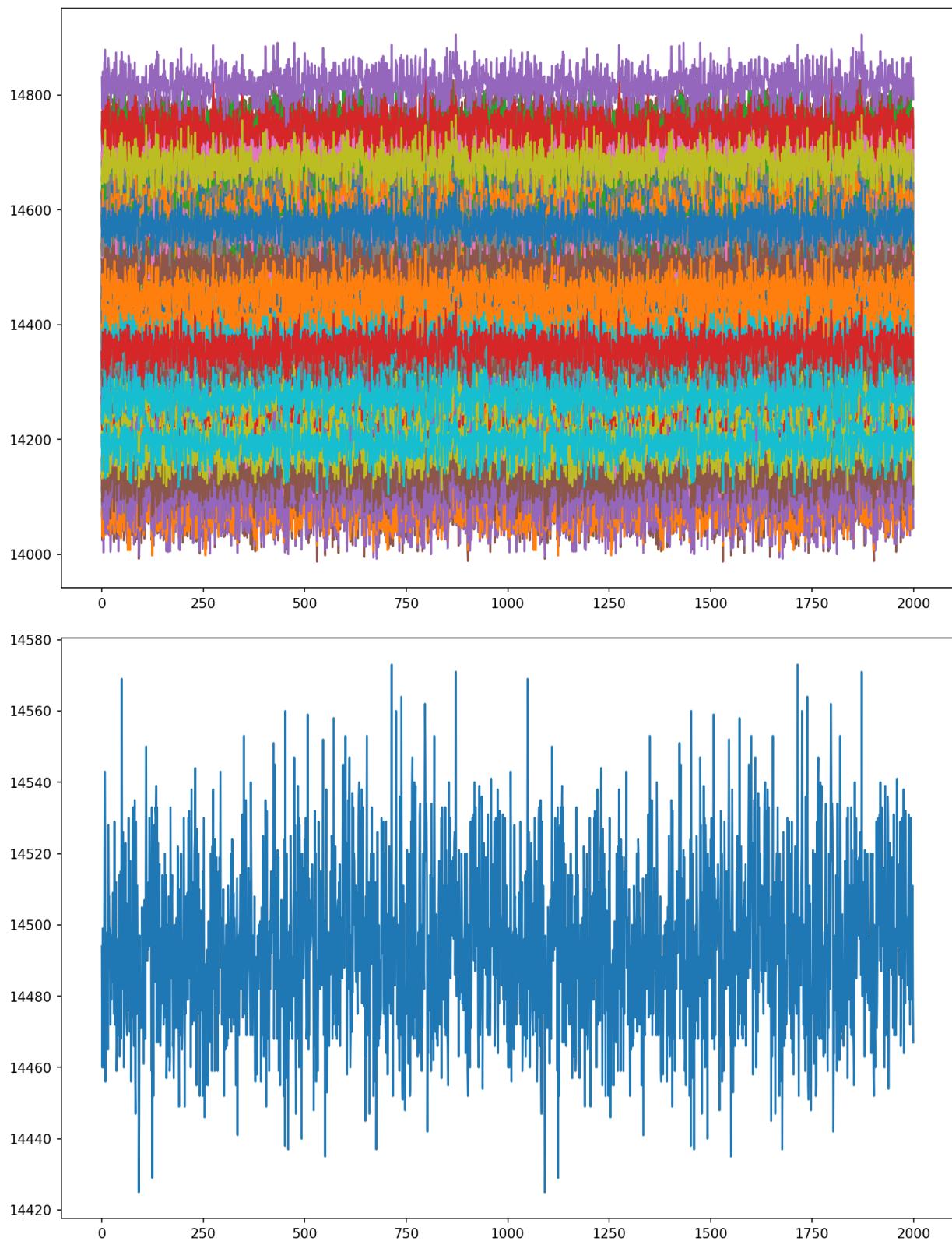
Read 1000 frames

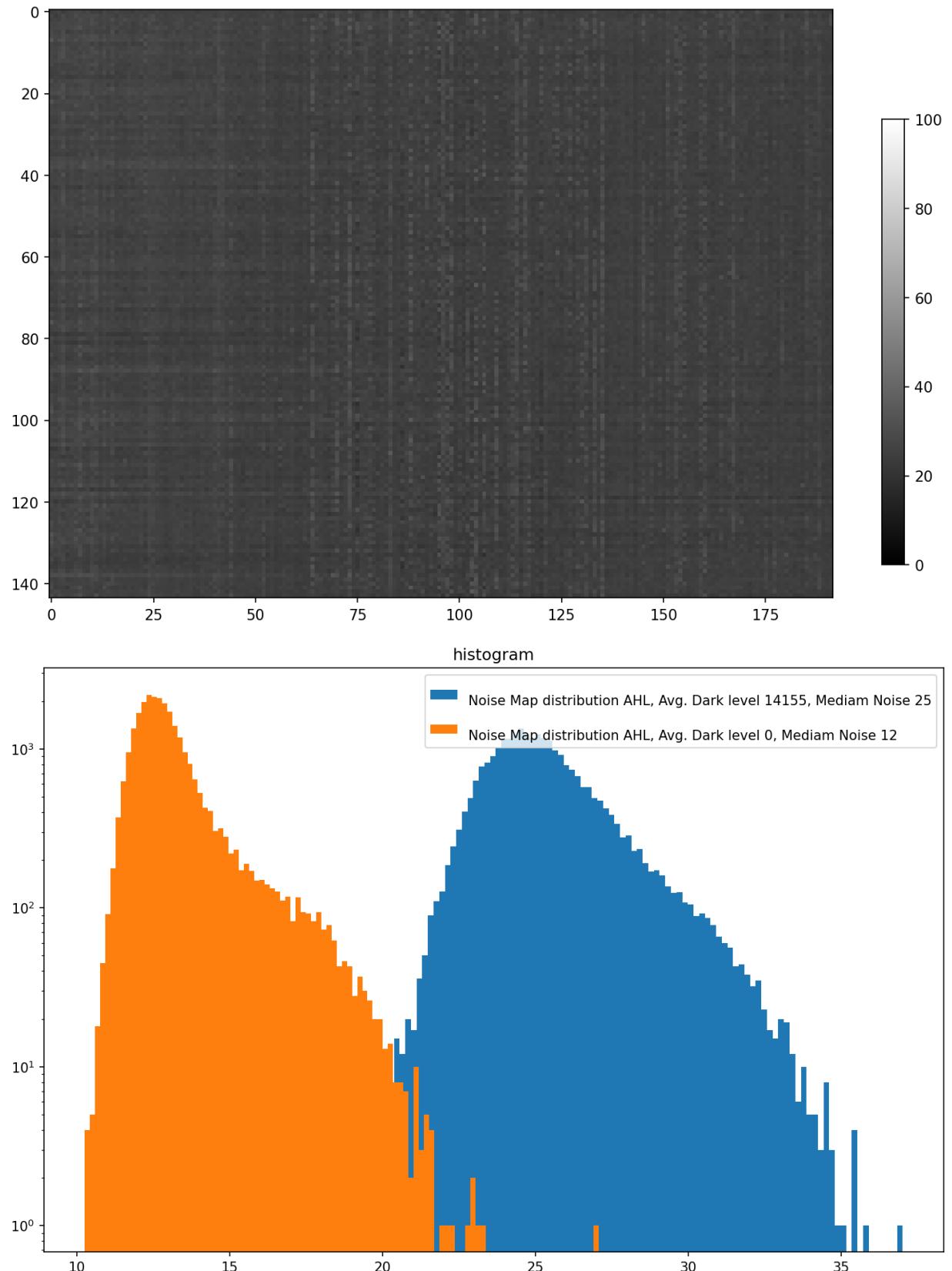
numberOfFrames in the 3D array: 1000

Starting descrambling images

(1000, 56088)

(144, 384)





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set_0_ePix10KTLCLS-IITiming_ASICv3_320MHz_noise-Analyses-ASIC2_WithStrongBack-HighGain

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(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz
_Preamp_7_Vld1b_0_PixelCB_5_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

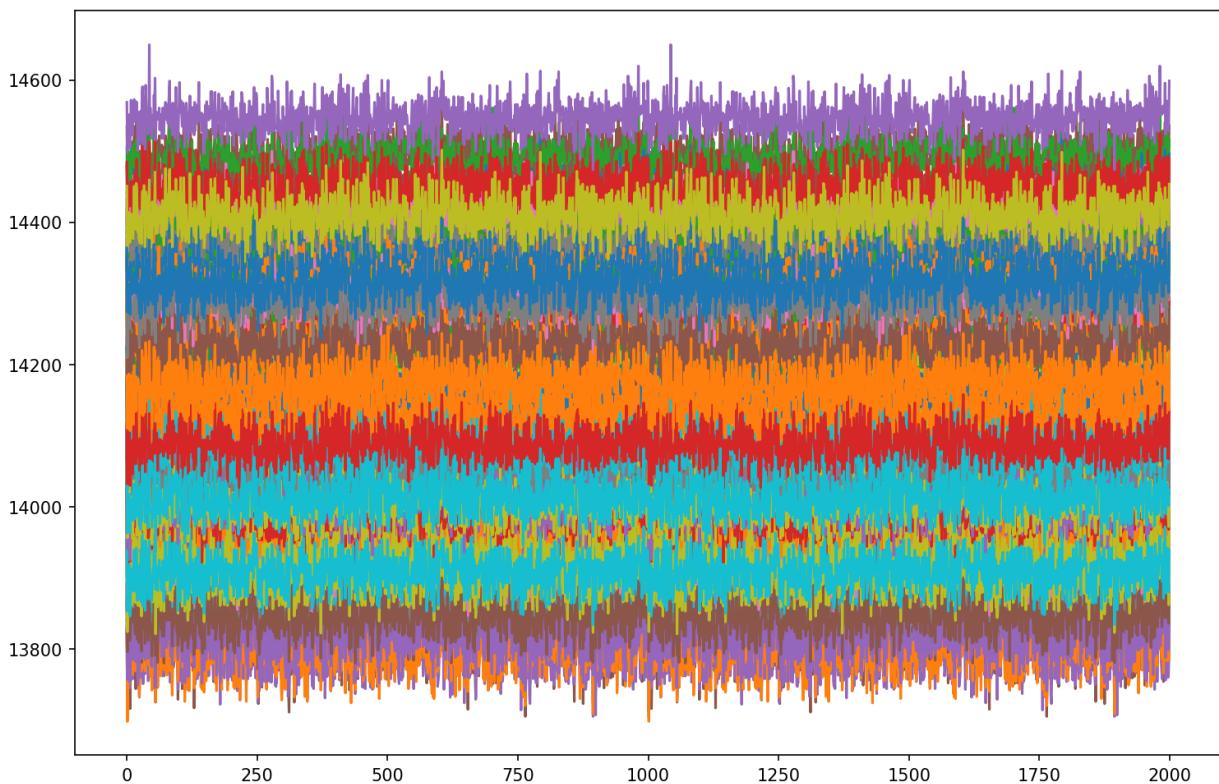
Read 1000 frames

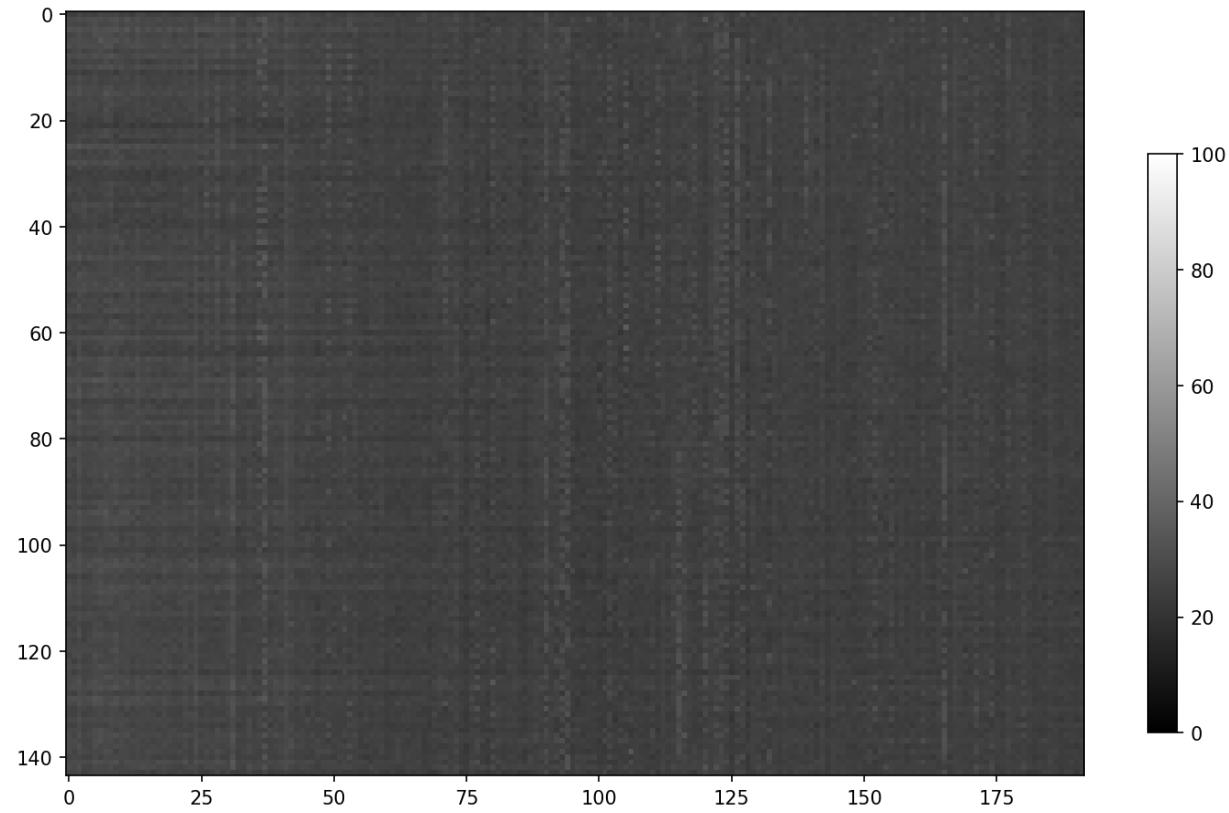
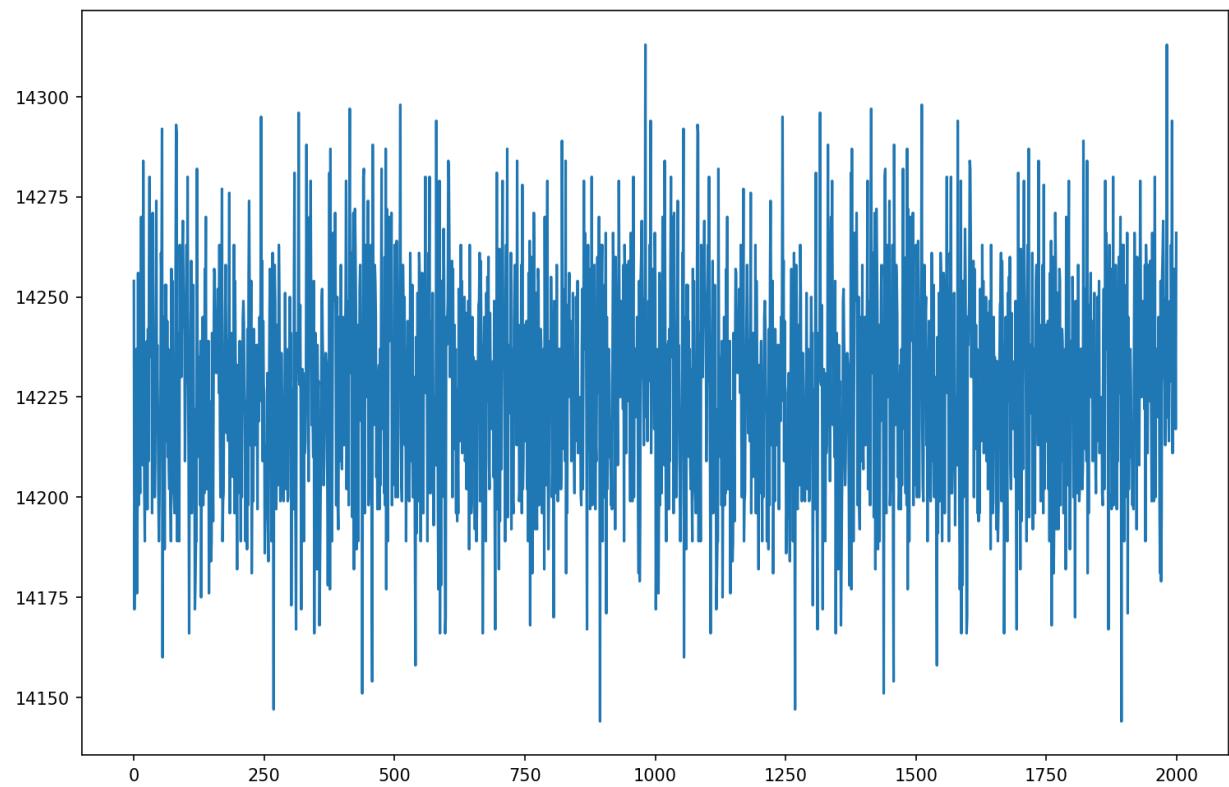
numberOfFrames in the 3D array: 1000

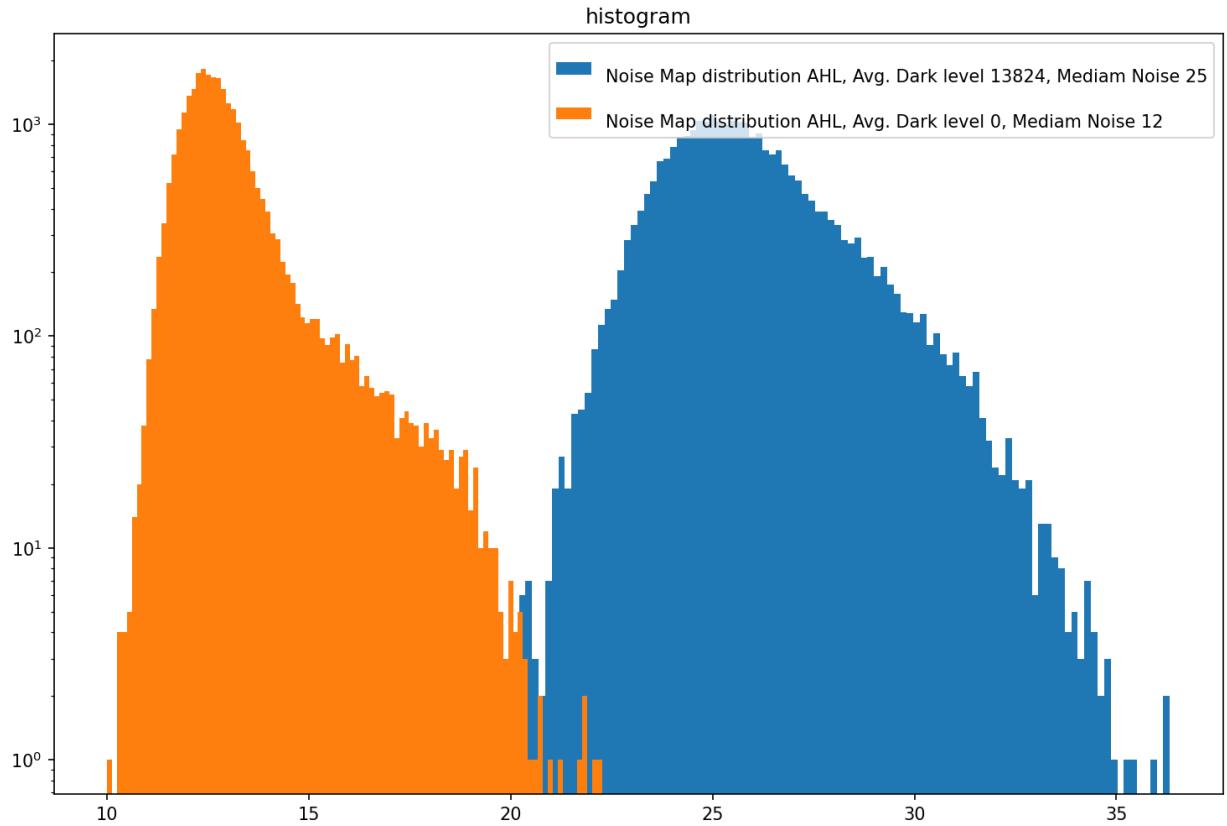
Starting descrambling images

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/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10KTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preamp_7_Vld1b_0_PixelCB_4_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

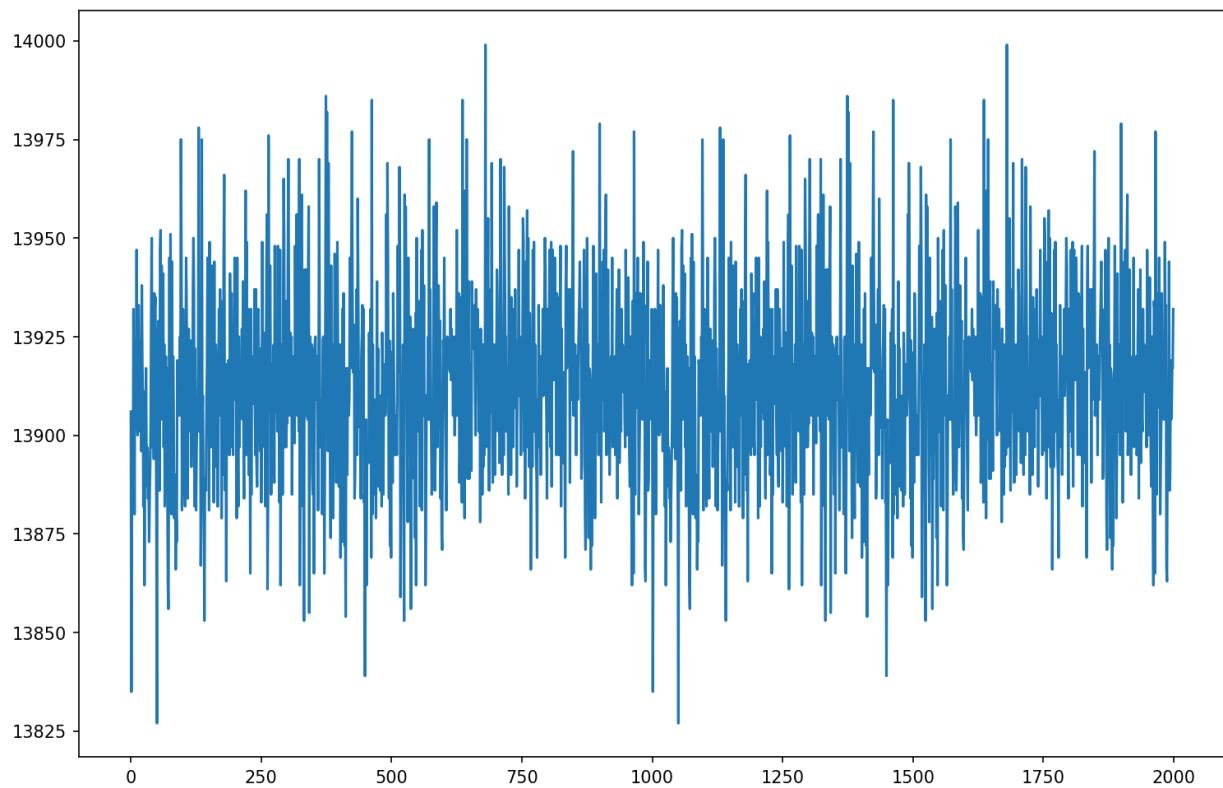
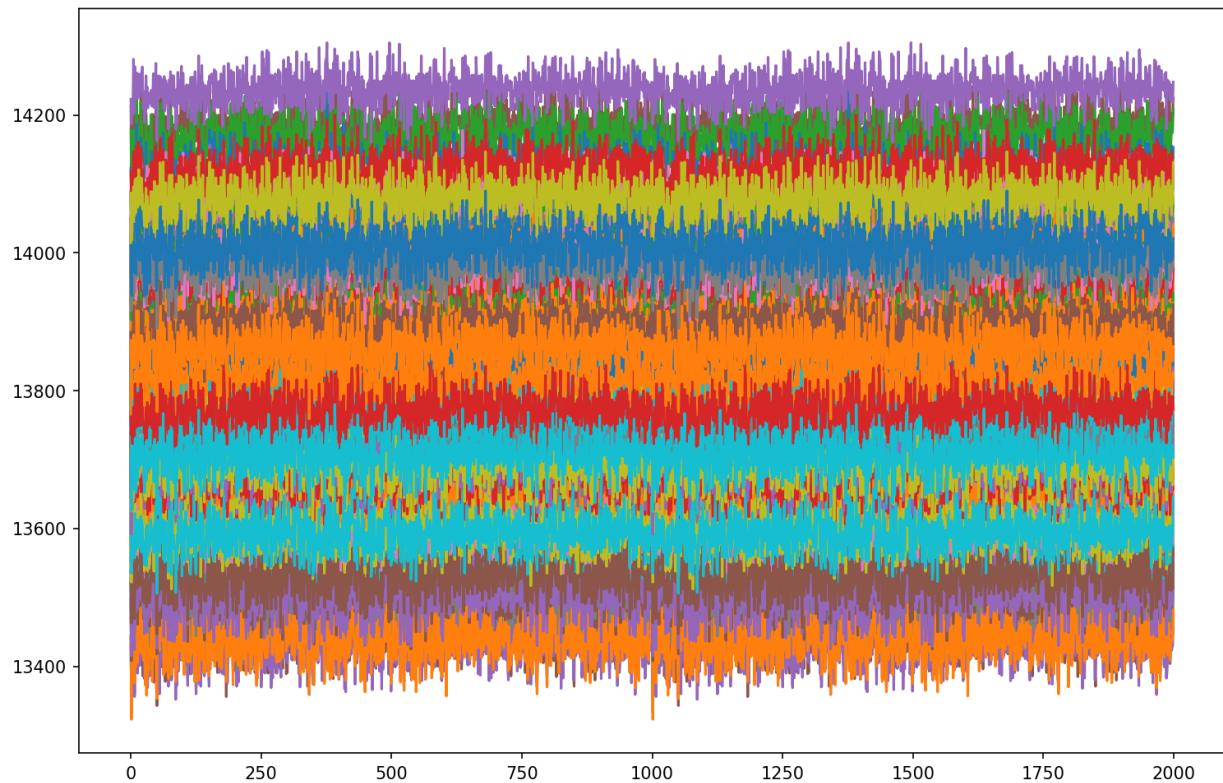
Read 1000 frames

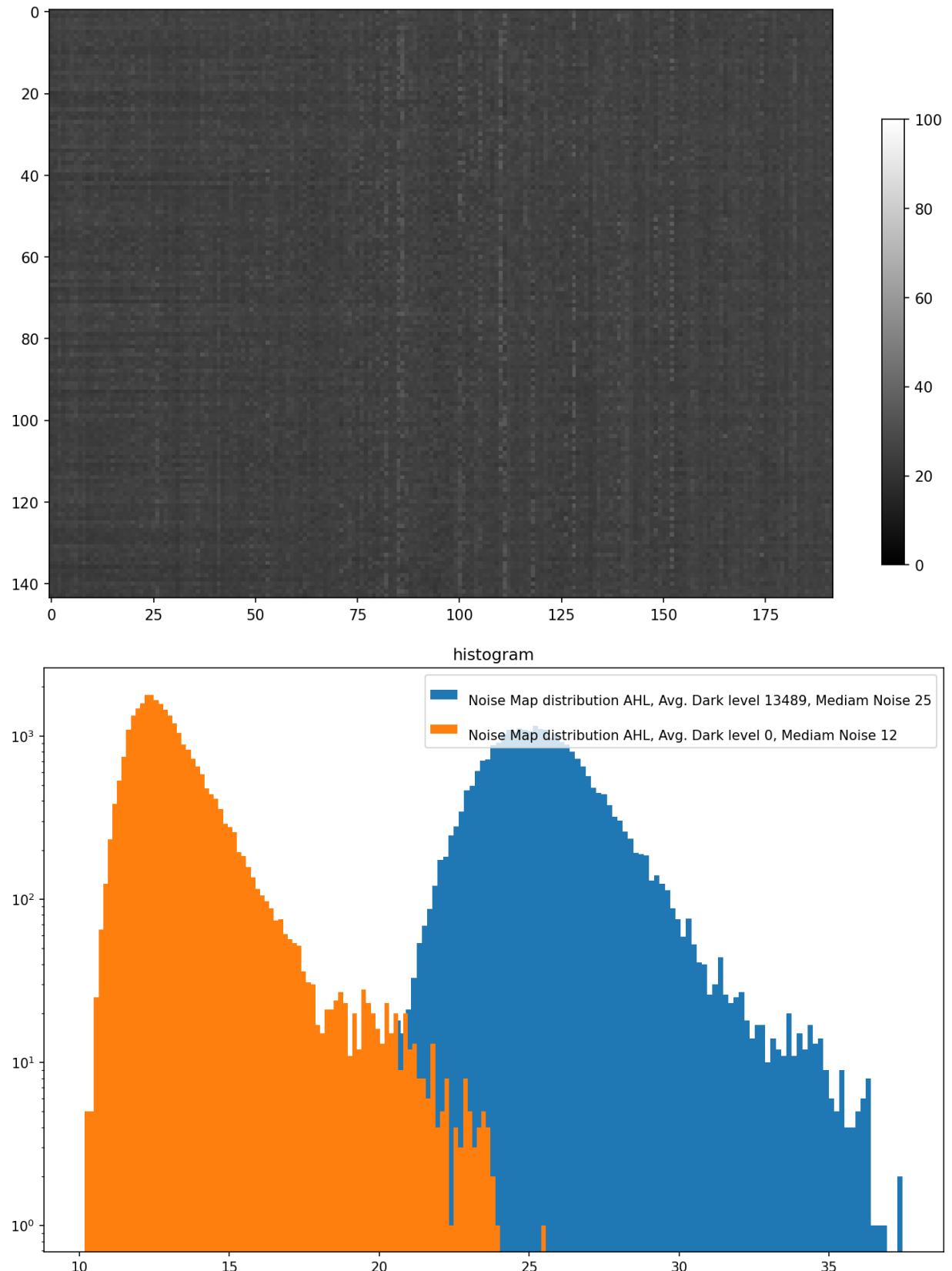
numberOfFrames in the 3D array: 1000

Starting descrambling images

(1000, 56088)

(144, 384)





2/13/23, 4:32 PM

set_0_ePix10KTLCLS-IIITiming_ASICv3_320MHz_noise-Analyses-ASIC2_WithStrongBack-HighGain

(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz
_Preamp_7_Vld1b_0_PixelCB_3_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

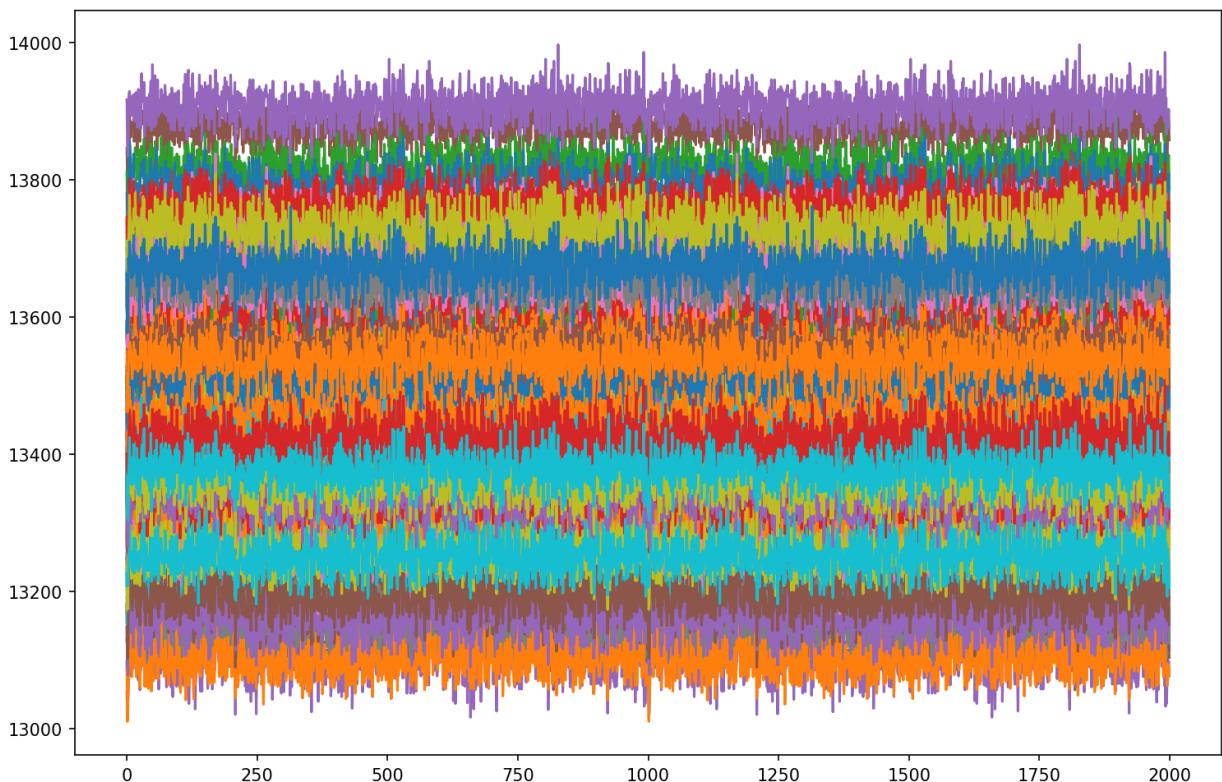
Read 1000 frames

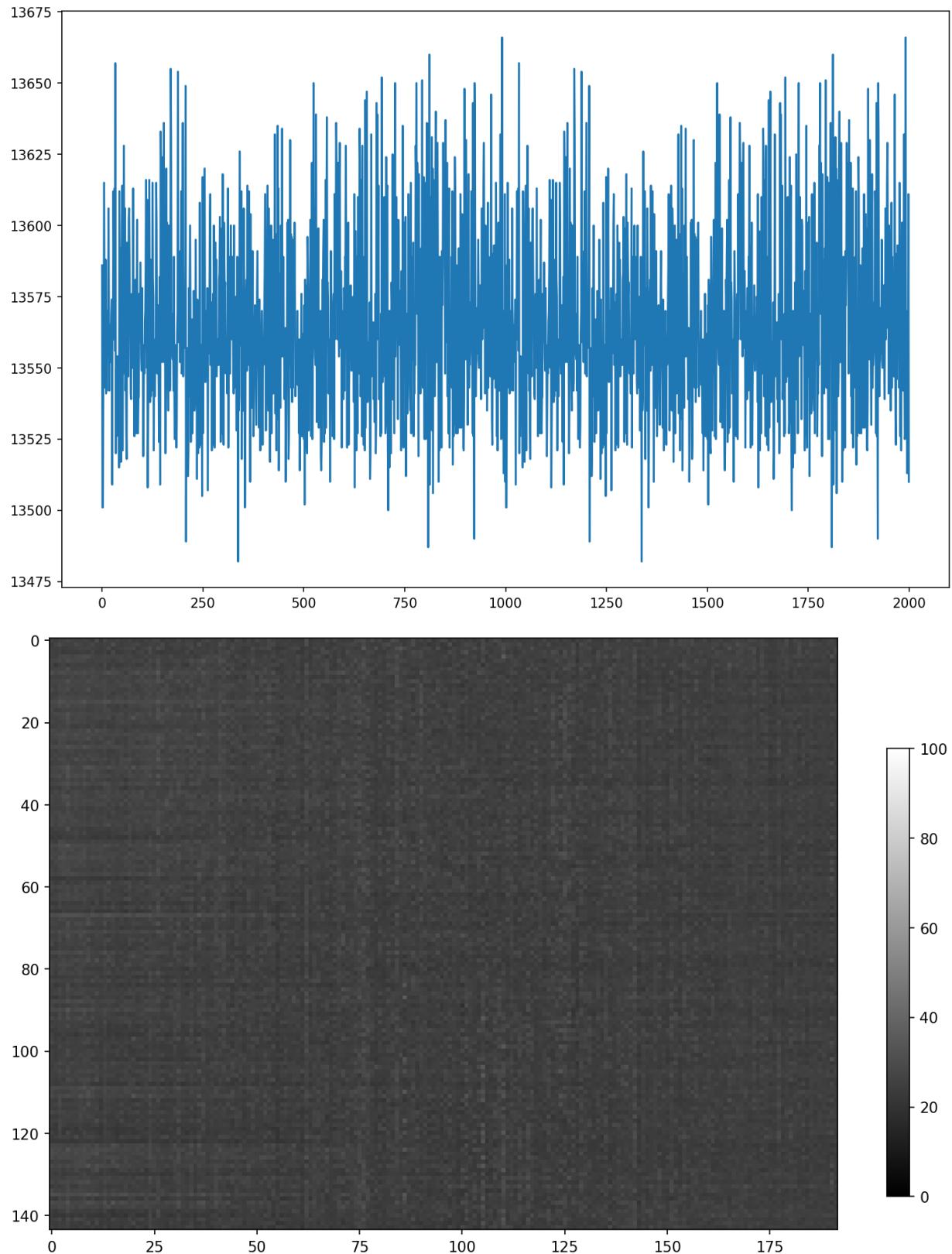
numberOfFrames in the 3D array: 1000

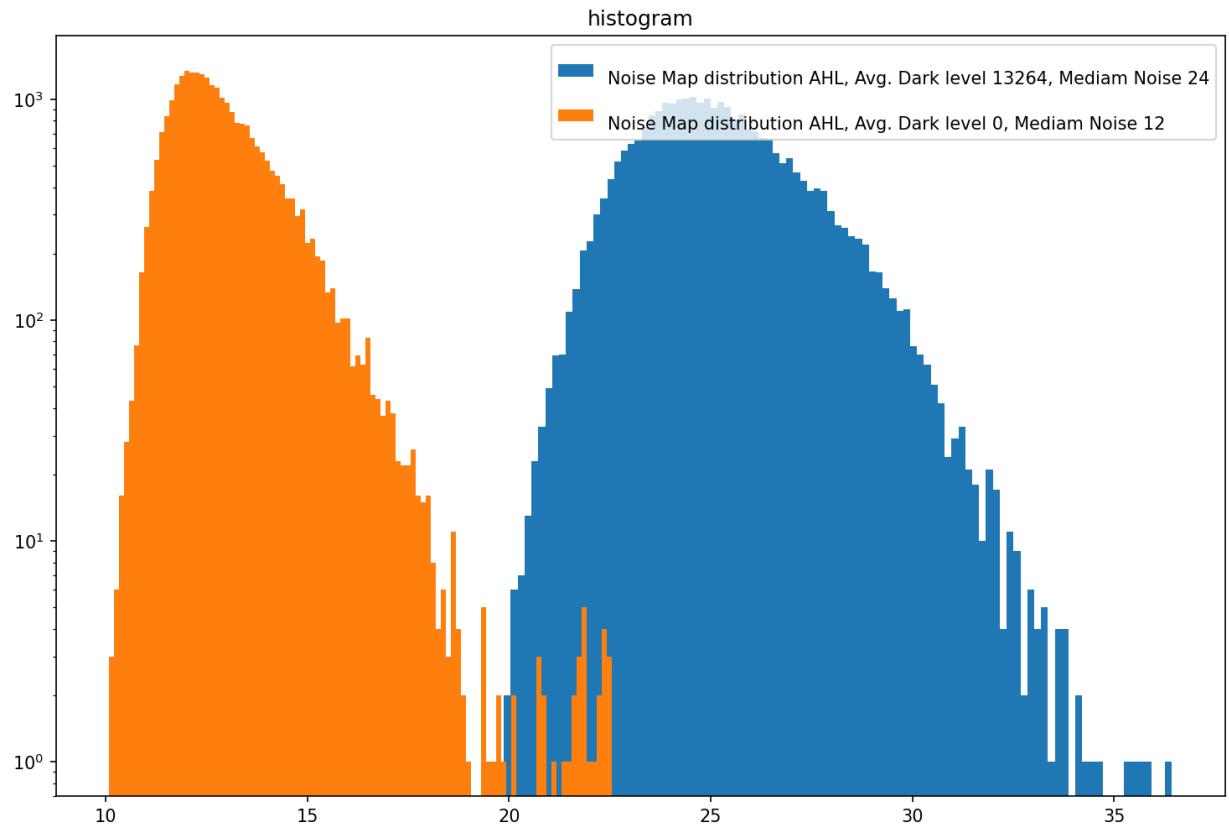
Starting descrambling images

(1000, 56088)

(144, 384)







(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preamp_7_Vld1b_0_PixelCB_2_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

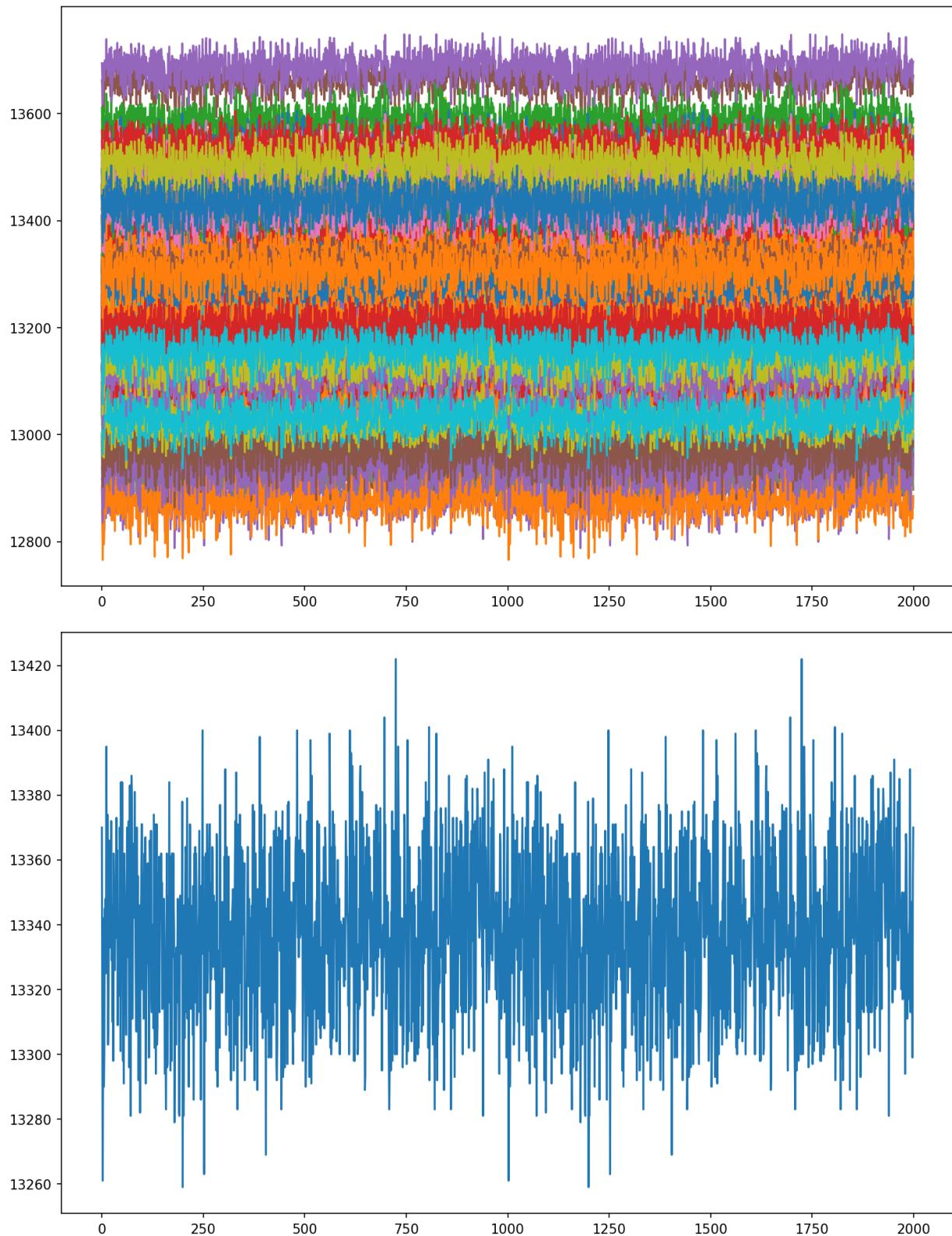
Read 1000 frames

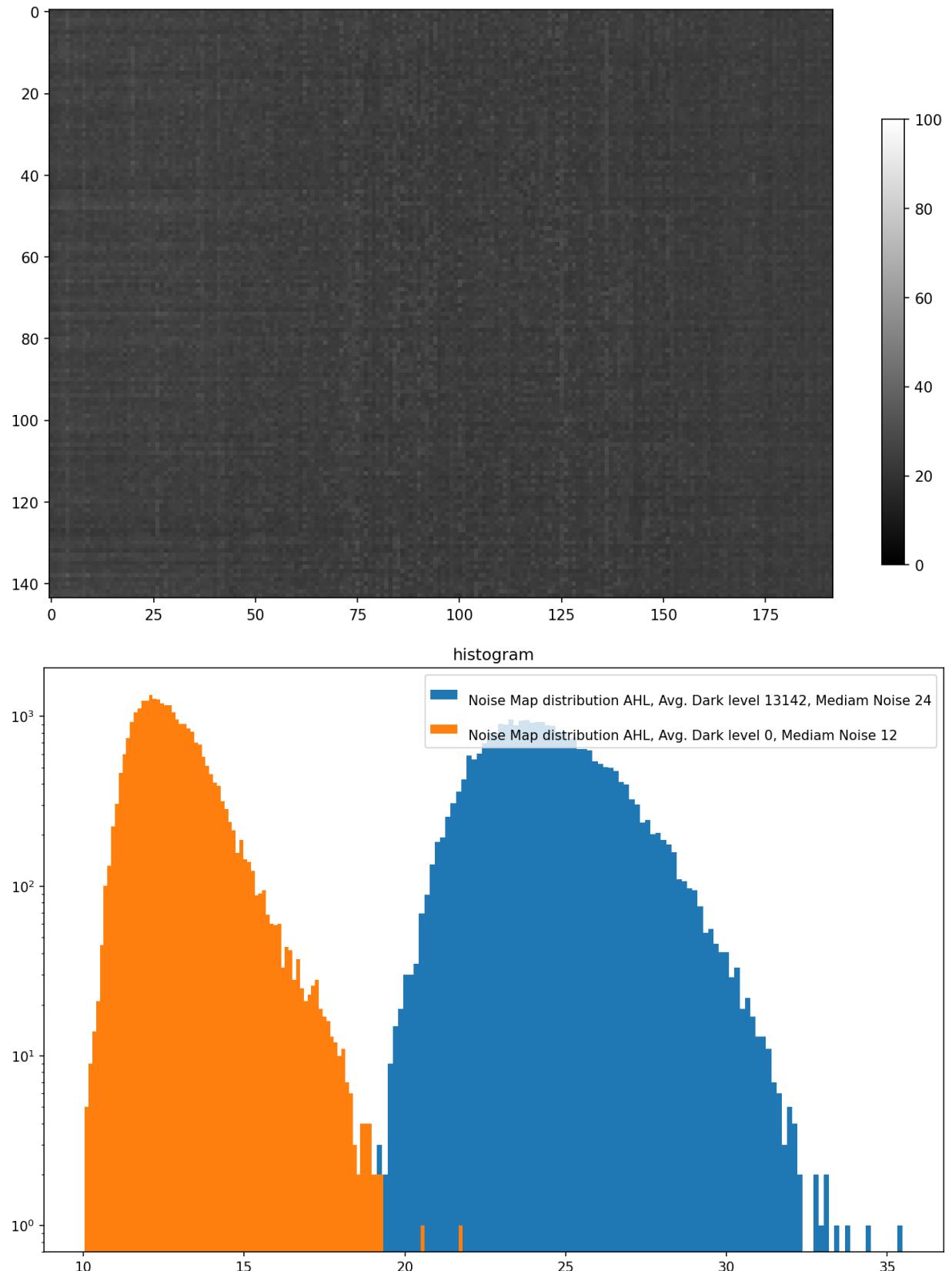
numberOfFrames in the 3D array: 1000

Starting descrambling images

(1000, 56088)

(144, 384)





2/13/23, 4:32 PM

set_0_ePix10KTLCLS-IITiming_ASICv3_320MHz_noise-Analyses-ASIC2_WithStrongBack-HighGain

(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz
_Preamp_7_Vld1b_0_PixelCB_1_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

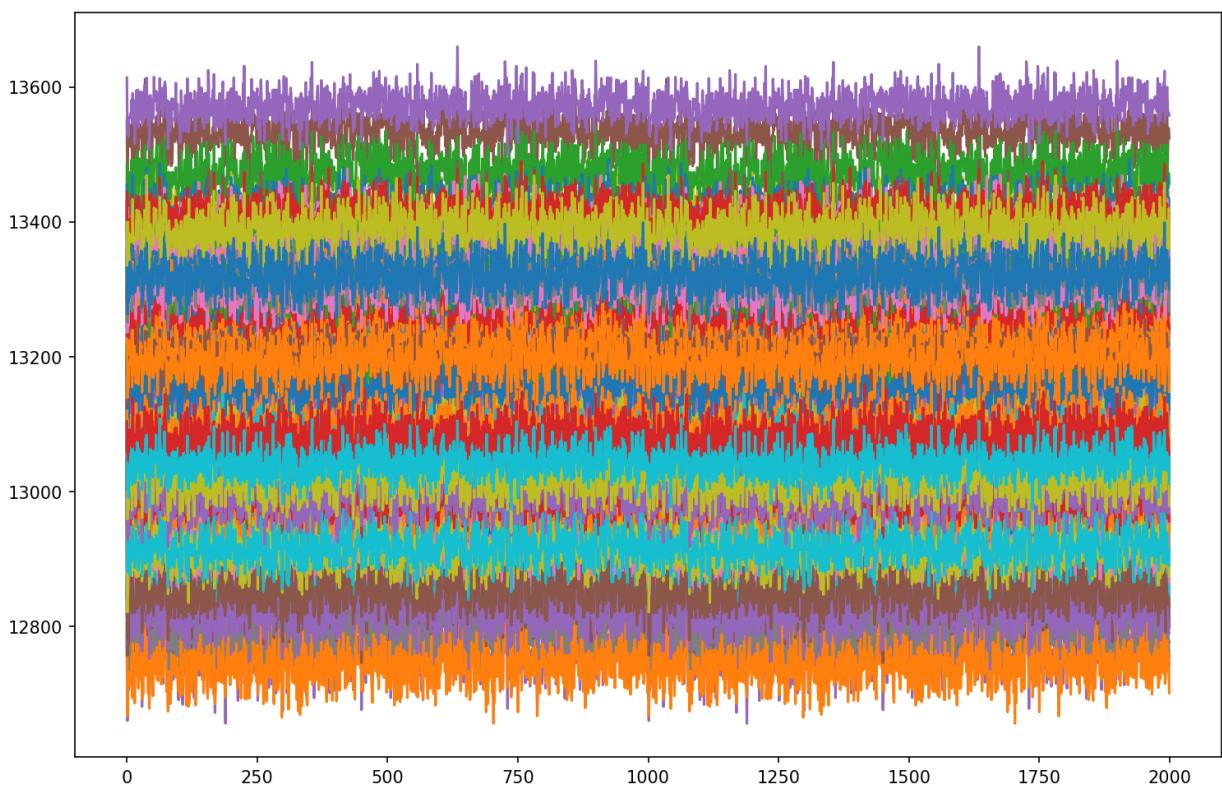
Read 1000 frames

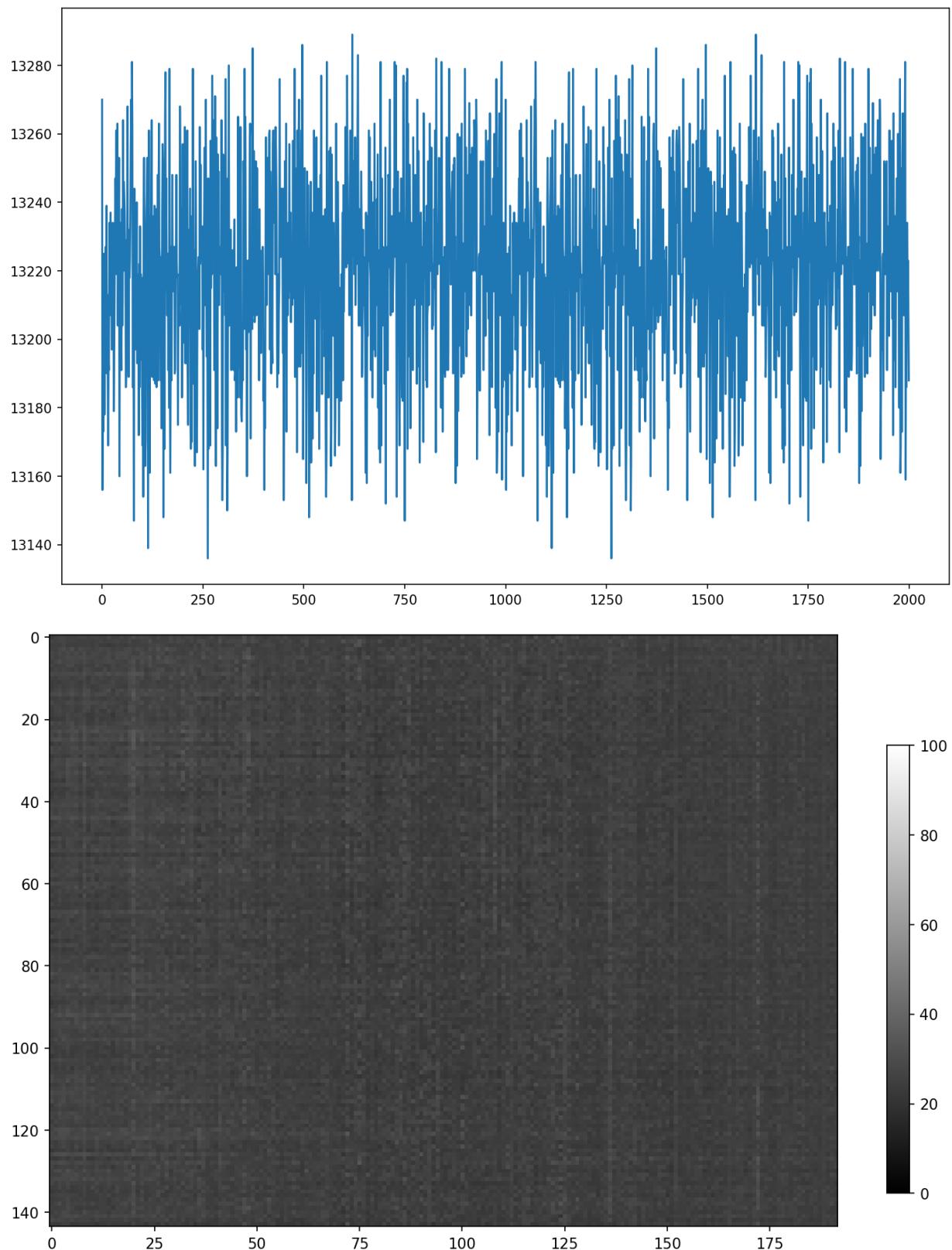
numberOfFrames in the 3D array: 1000

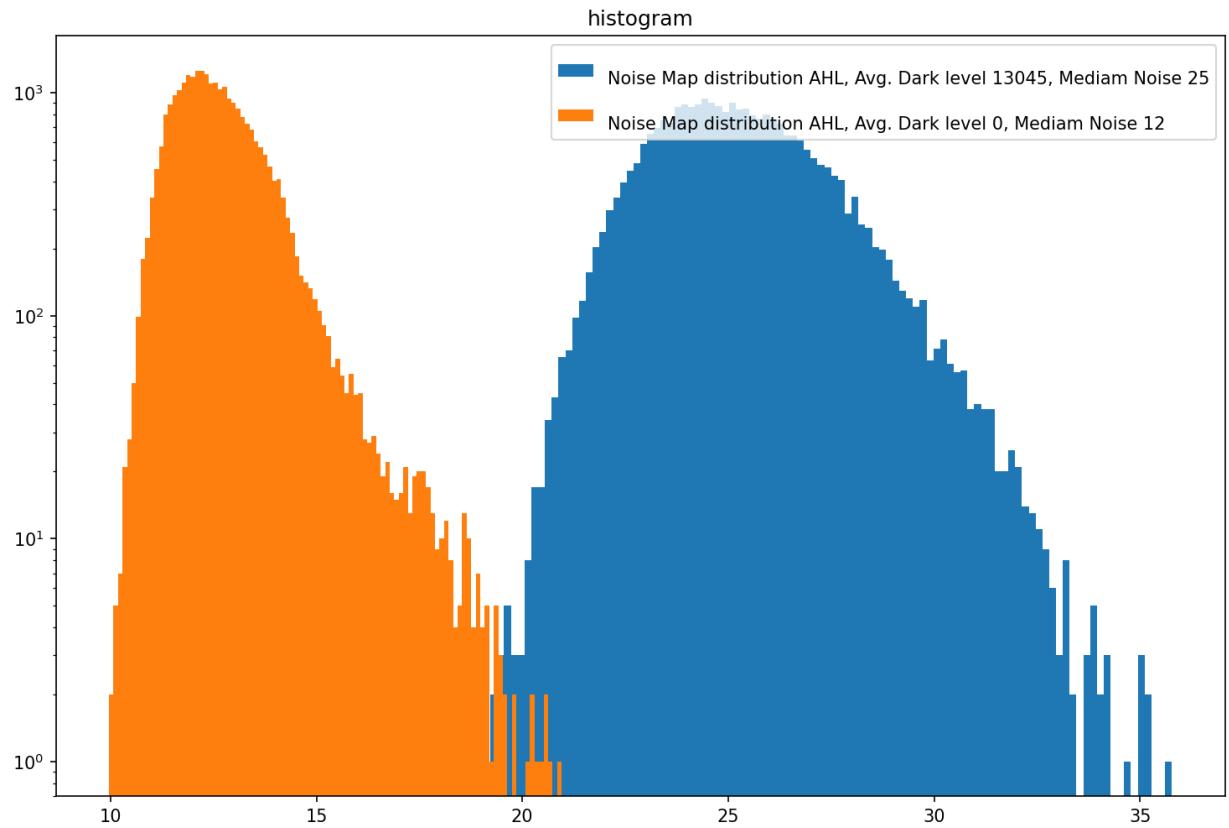
Starting descrambling images

(1000, 56088)

(144, 384)







(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10KTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preampl_7_Vld1b_0_PixelCB_0_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

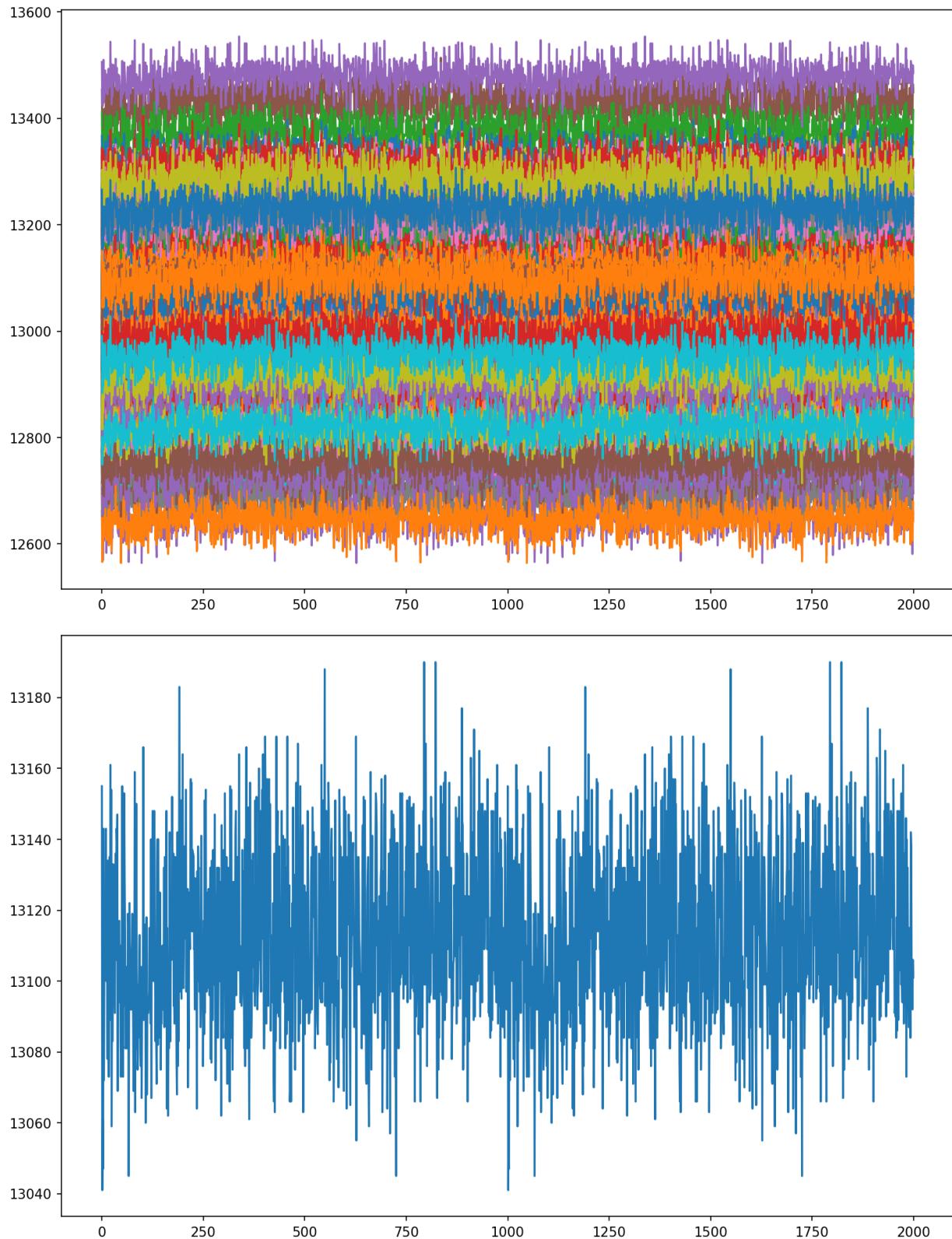
Read 1000 frames

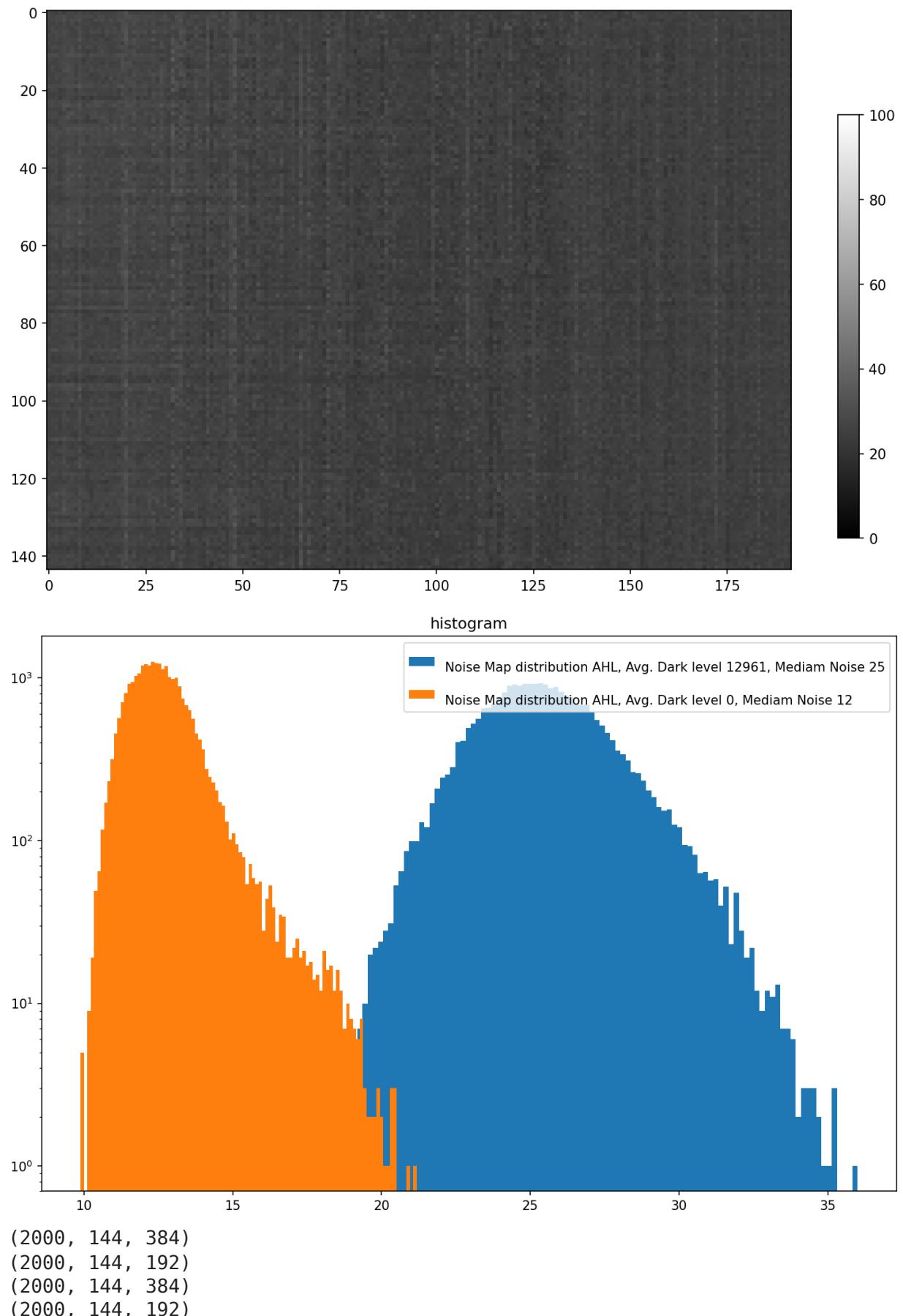
numberOfFrames in the 3D array: 1000

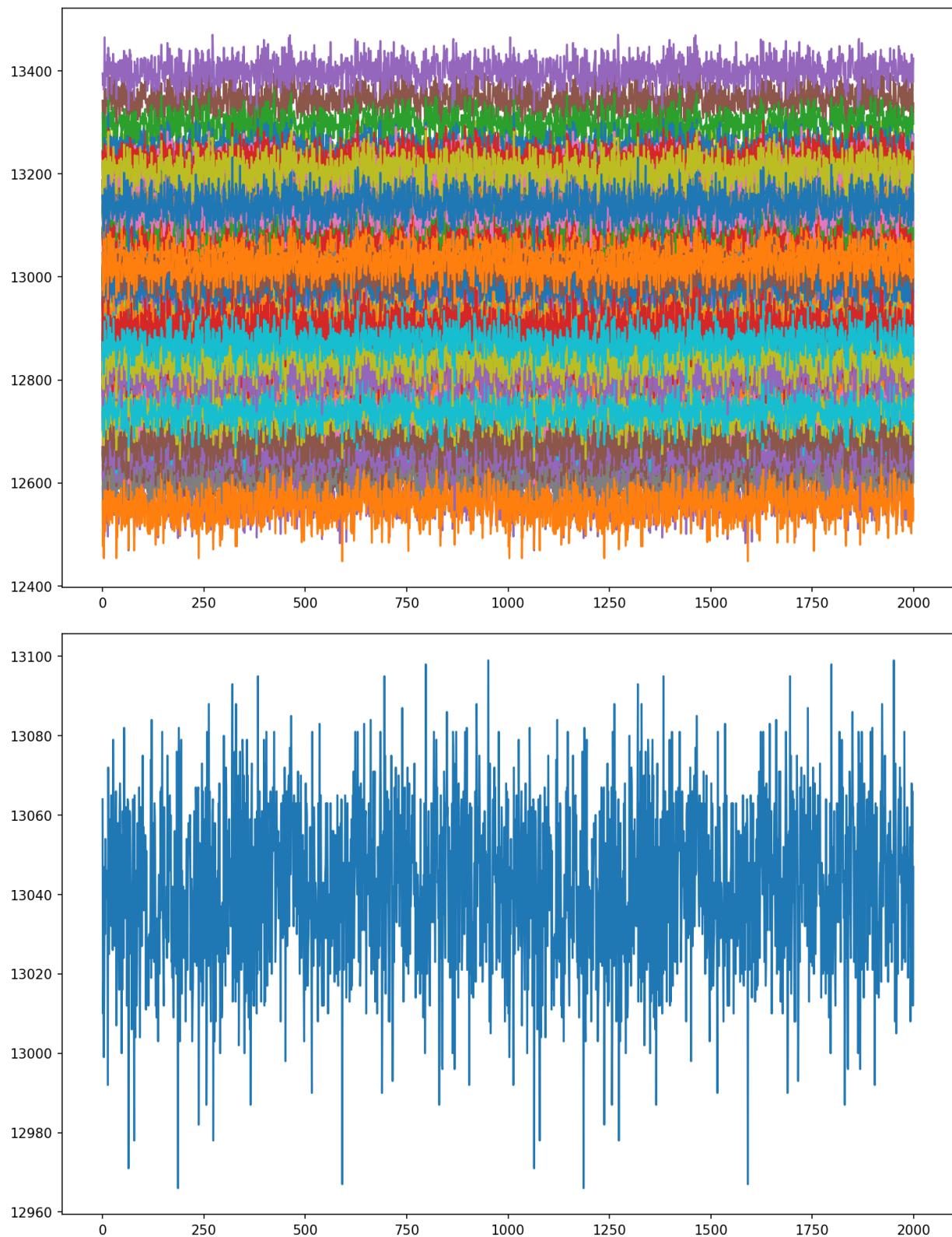
Starting descrambling images

(1000, 56088)

(144, 384)







```
In [32]: Preamp = 7
Vld1_b = 0
Pixel_CB= 7
Filter_DACList=[7, 13, 15, 17, 19, 21, 27, 37, 47, 57]
VRef_DAC = 58

for Filter_DAC in Filter_DACList:
    #####
```

```
# Remove previous dataset
filename = (f'/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_#####
##### imgDesc = read_asic_test()
##### [noiseMap, darkAvg] = noise_print(0)
```

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz
_Preamp_7_Vld1b_0_PixelCB_7_Filter_DAC_7_VRrefdac_58_run1.dat

Starting to get data set 0

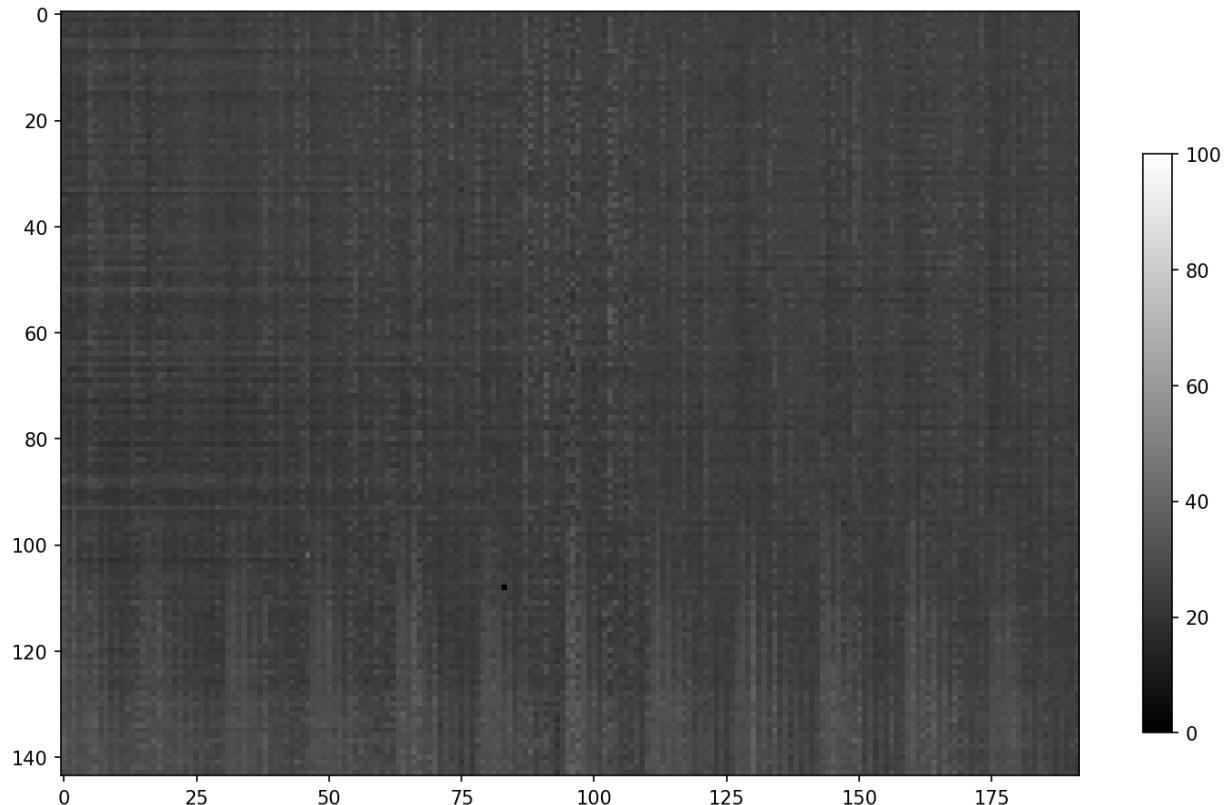
Read 1000 frames

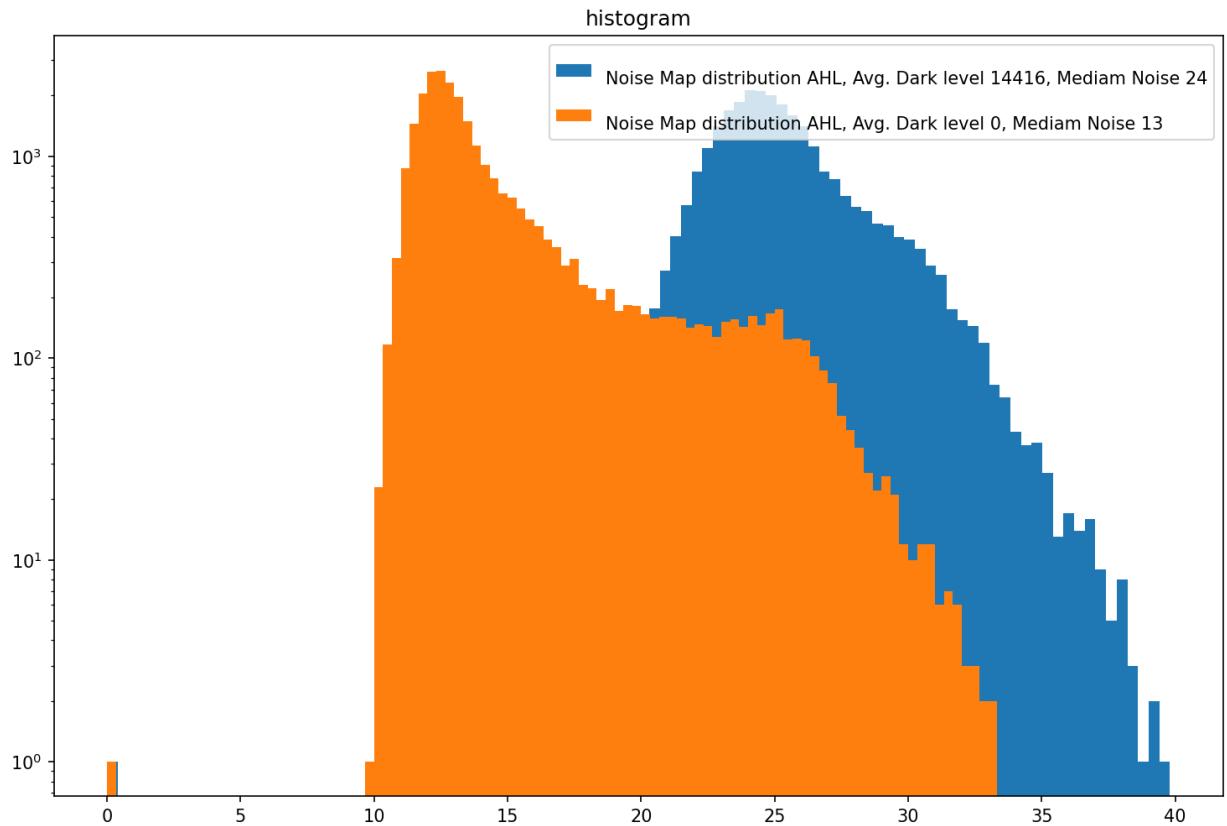
numberOffFrames in the 3D array: 1000

Starting descrambling images

(1000, 56088)

(144, 384)





(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preamp_7_Vld1b_0_PixelCB_7_Filter_DAC_13_VRrefdac_58_run1.dat

Starting to get data set 0

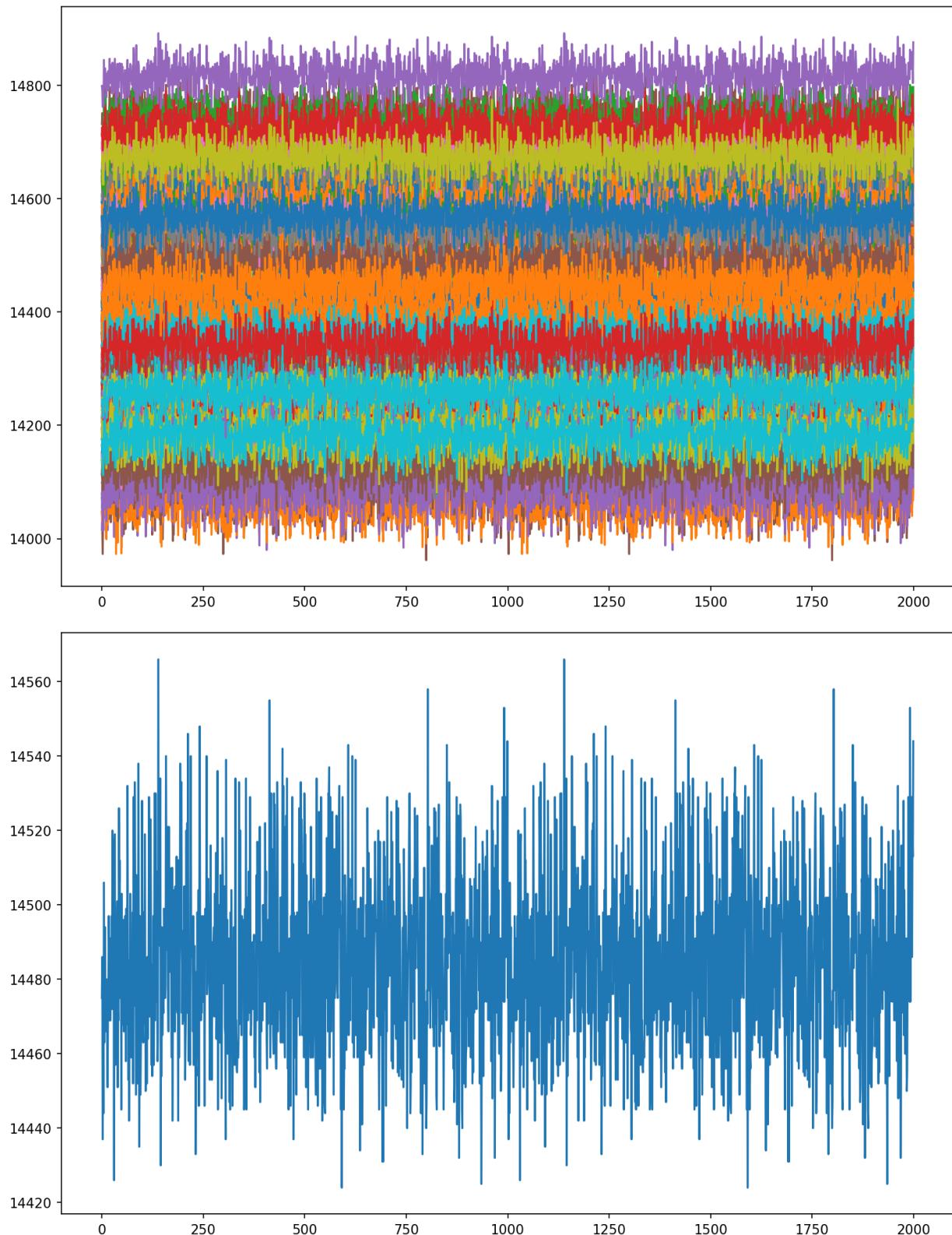
Read 1000 frames

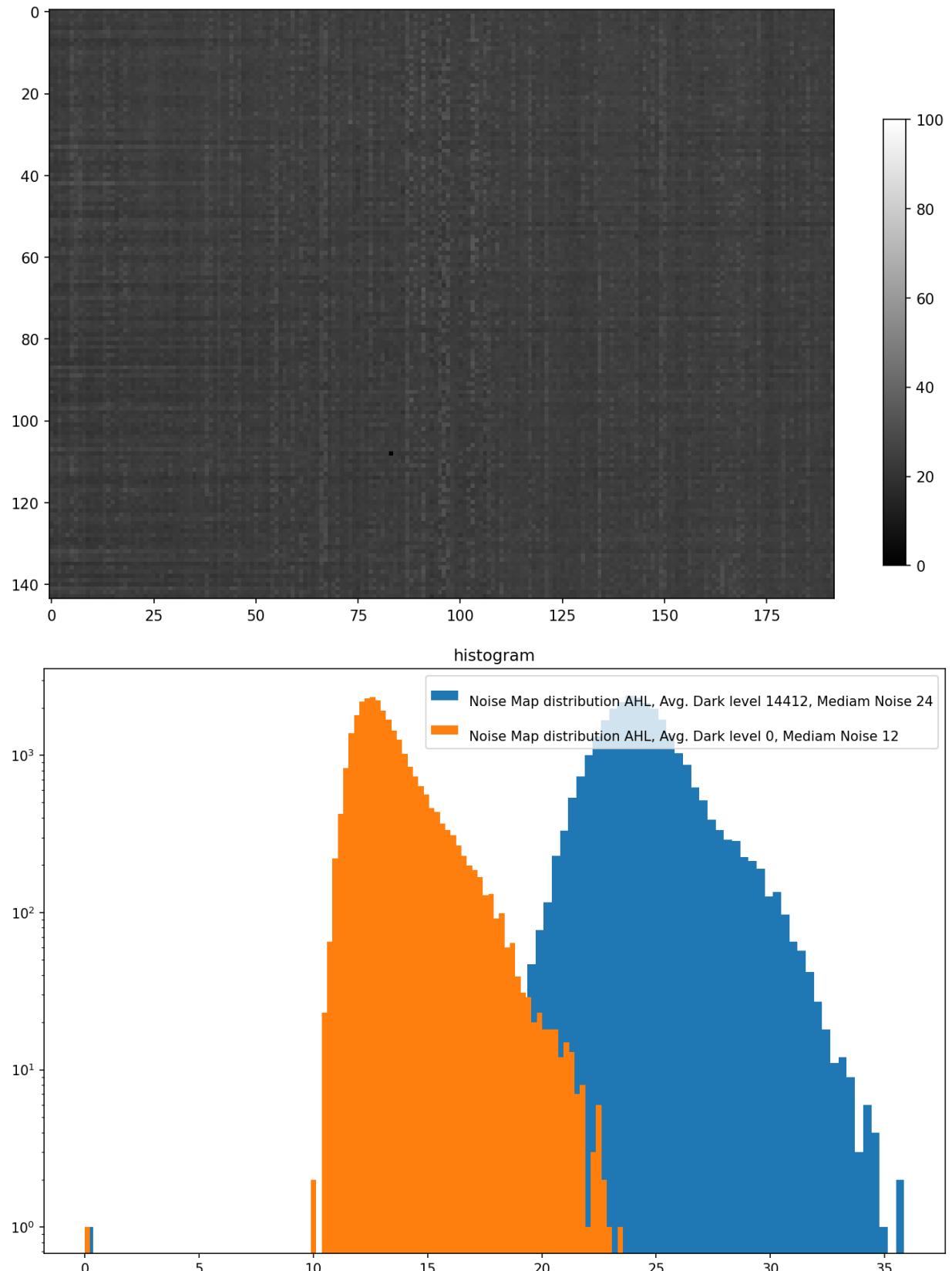
numberOfFrames in the 3D array: 1000

Starting descrambling images

(1000, 56088)

(144, 384)





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set_0_ePix10KTLCLS-IITiming_ASICv3_320MHz_noise-Analyses-ASIC2_WithStrongBack-HighGain

(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz
_Preamp_7_Vld1b_0_PixelCB_7_Filter_DAC_15_VRrefdac_58_run1.dat

Starting to get data set 0

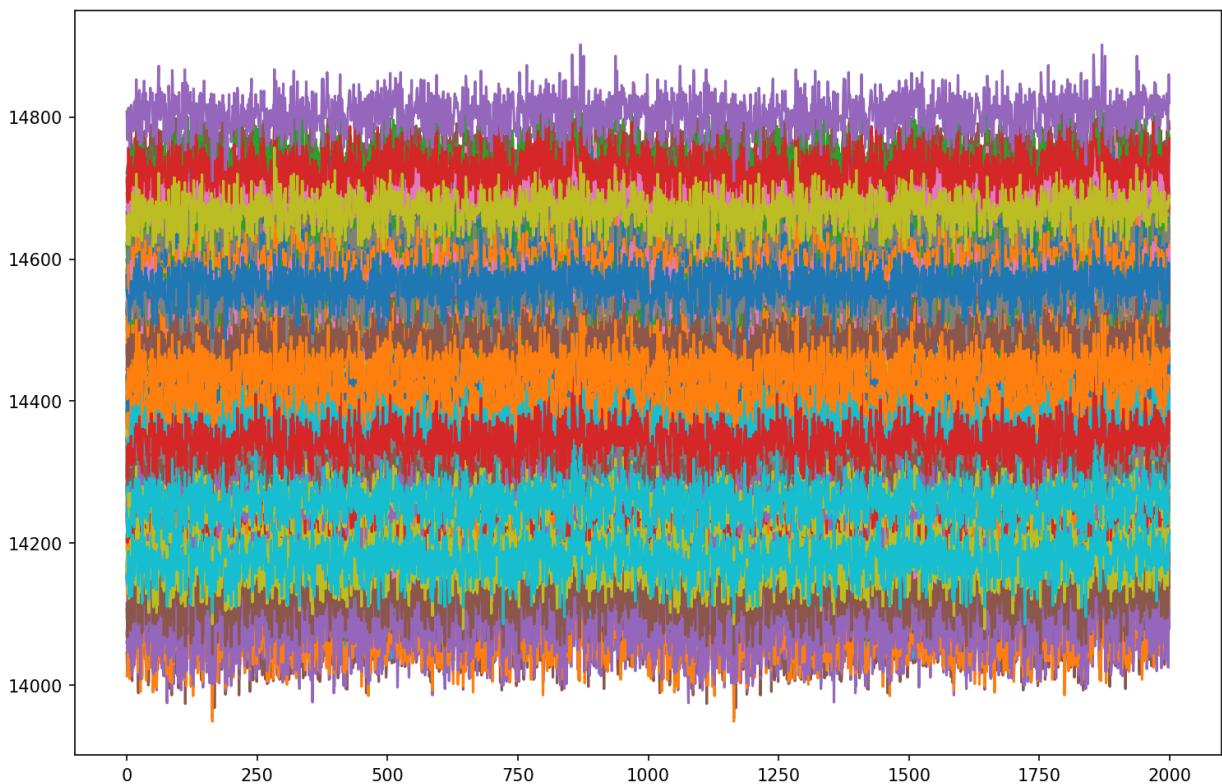
Read 1000 frames

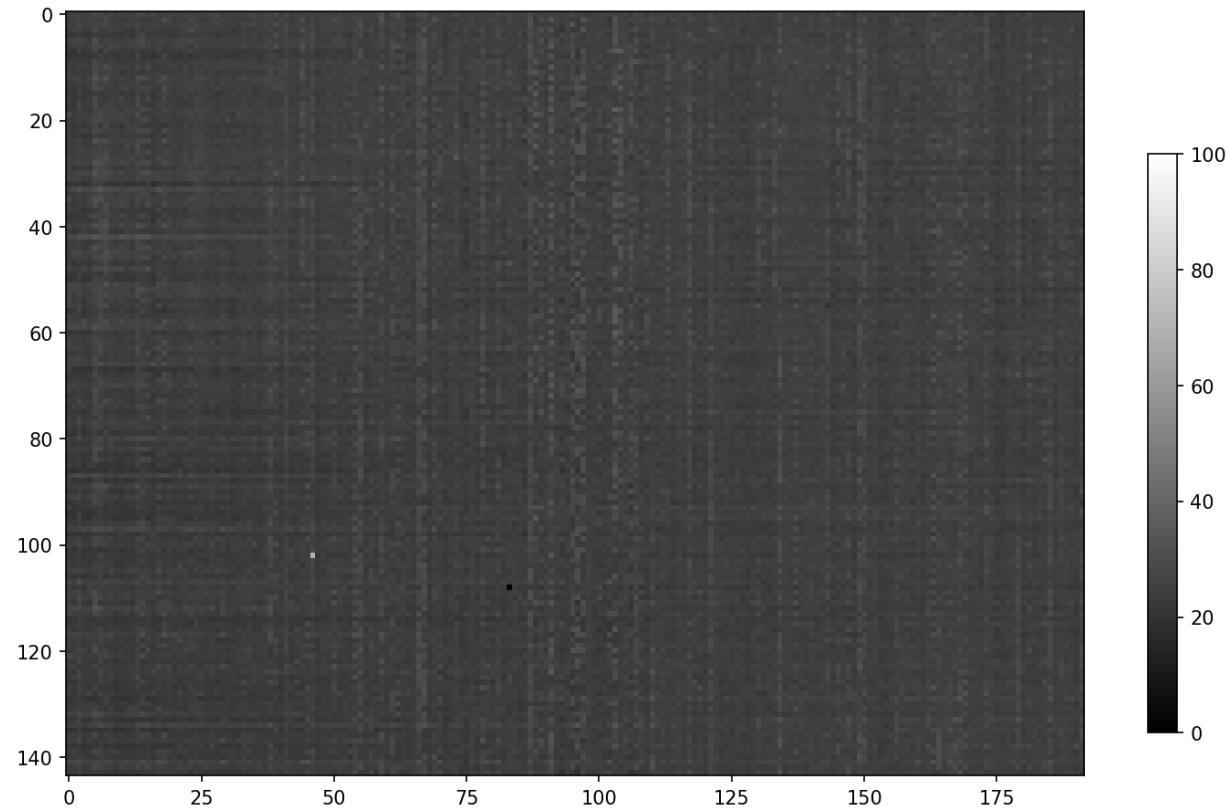
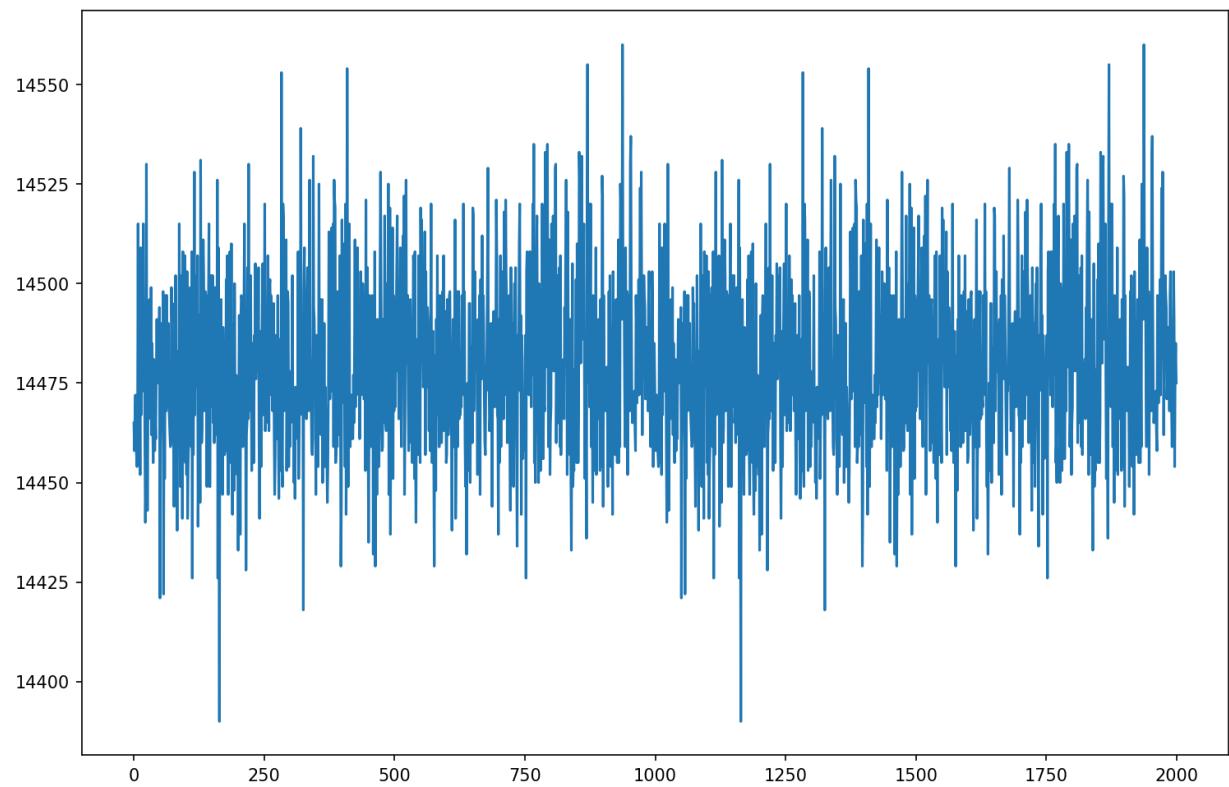
numberOfFrames in the 3D array: 1000

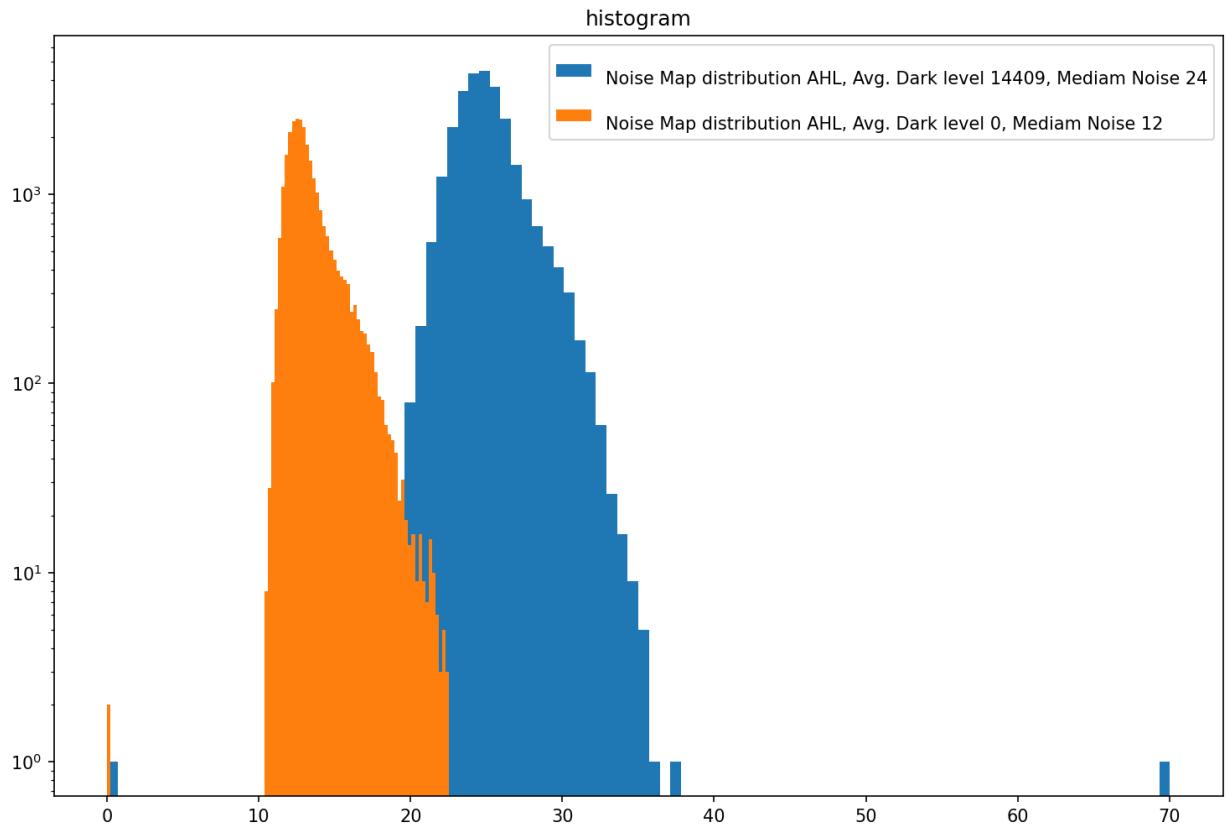
Starting descrambling images

(1000, 56088)

(144, 384)







(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10KTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preamp_7_Vld1b_0_PixelCB_7_Filter_DAC_17_VRrefdac_58_run1.dat

Starting to get data set 0

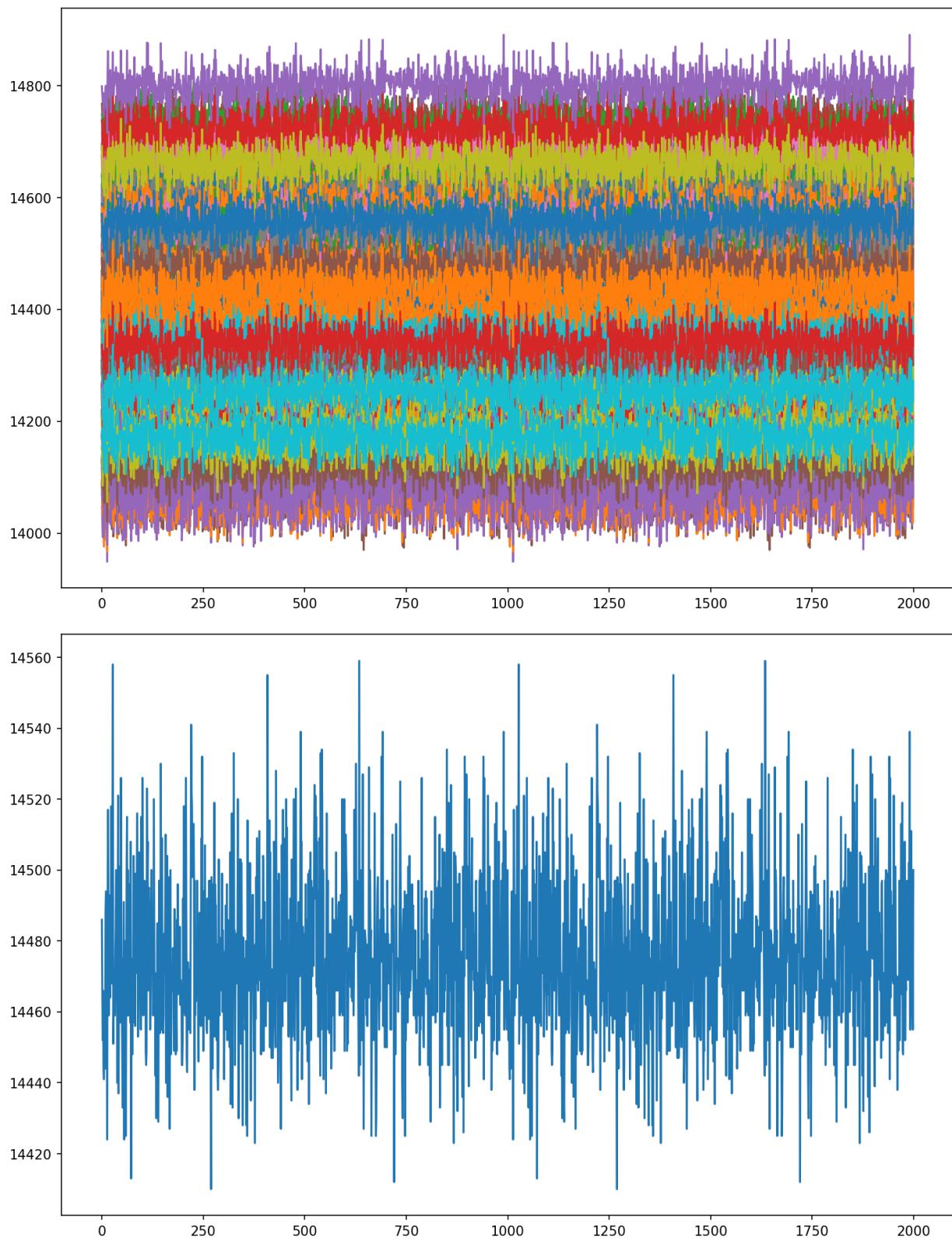
Read 1000 frames

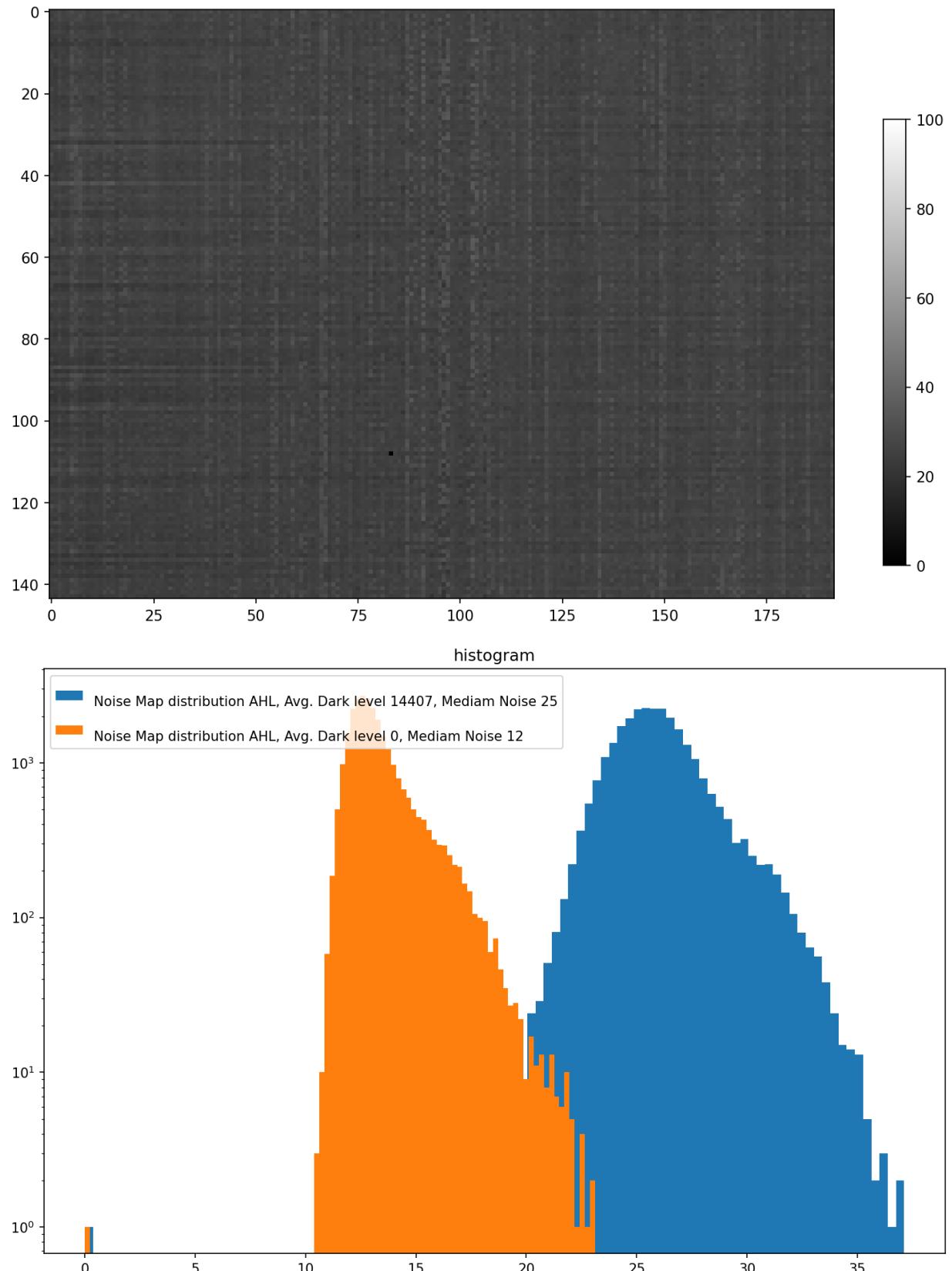
numberOfFrames in the 3D array: 1000

Starting descrambling images

(1000, 56088)

(144, 384)





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set_0_ePix10KTLCLS-IITiming_ASICv3_320MHz_noise-Analyses-ASIC2_WithStrongBack-HighGain

(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz
_Preamp_7_Vld1b_0_PixelCB_7_Filter_DAC_19_VRrefdac_58_run1.dat

Starting to get data set 0

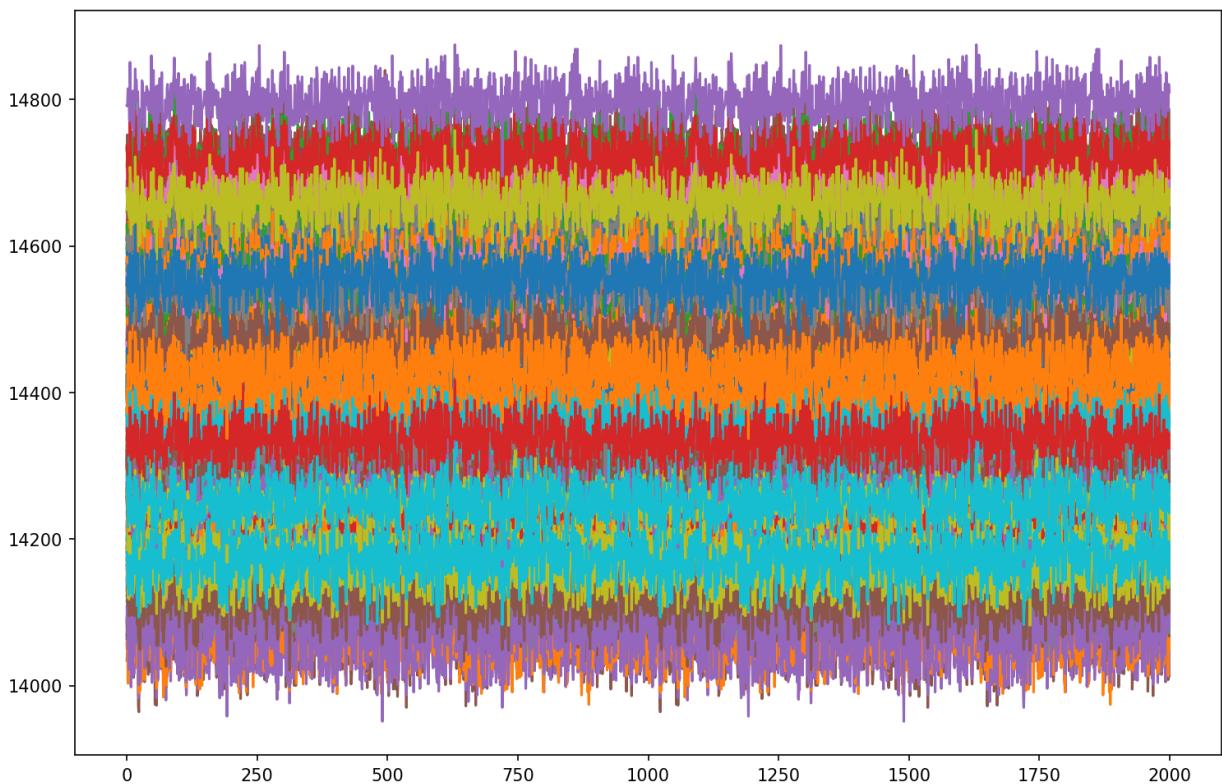
Read 1000 frames

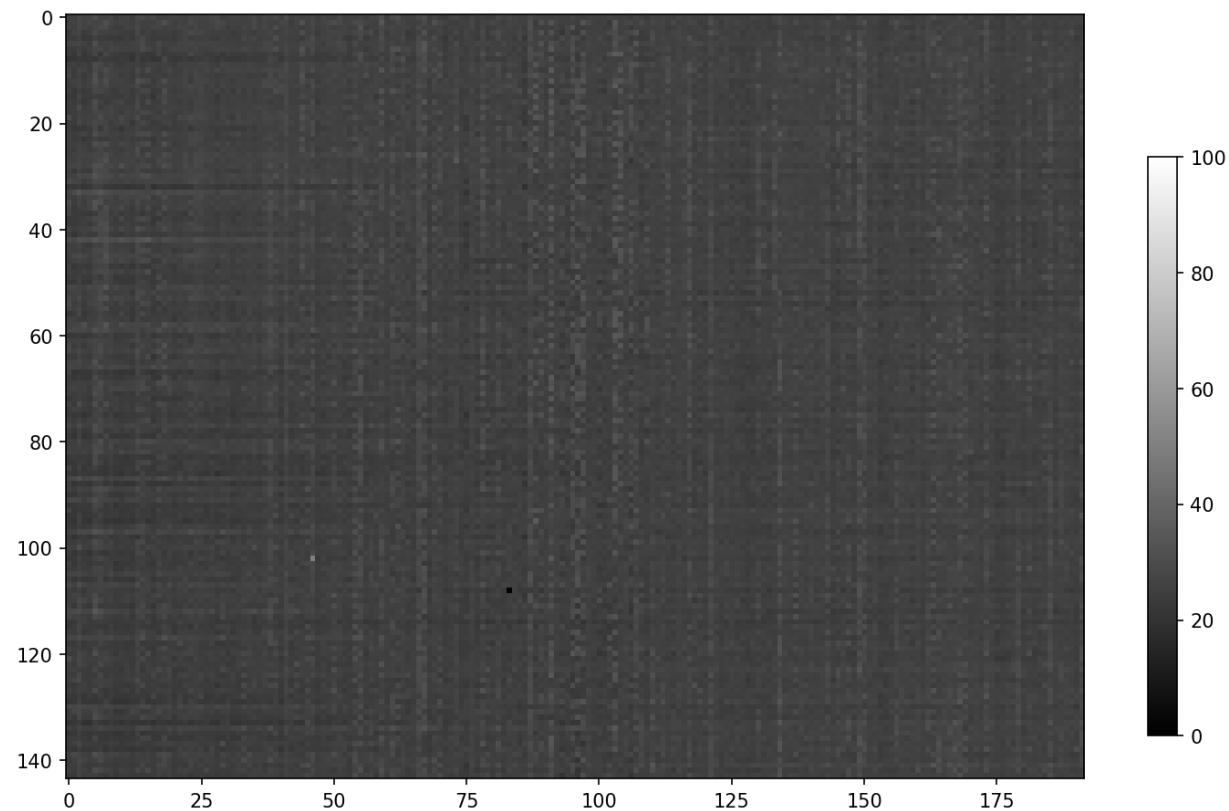
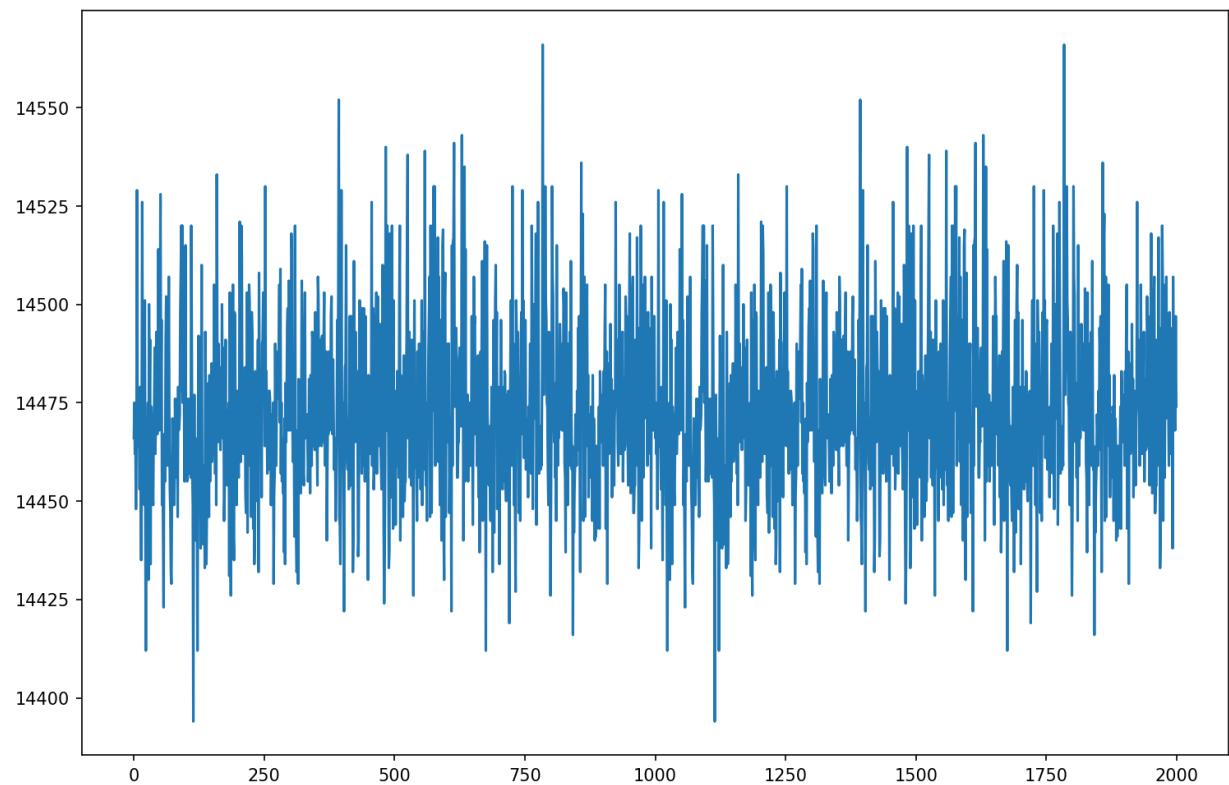
numberOfFrames in the 3D array: 1000

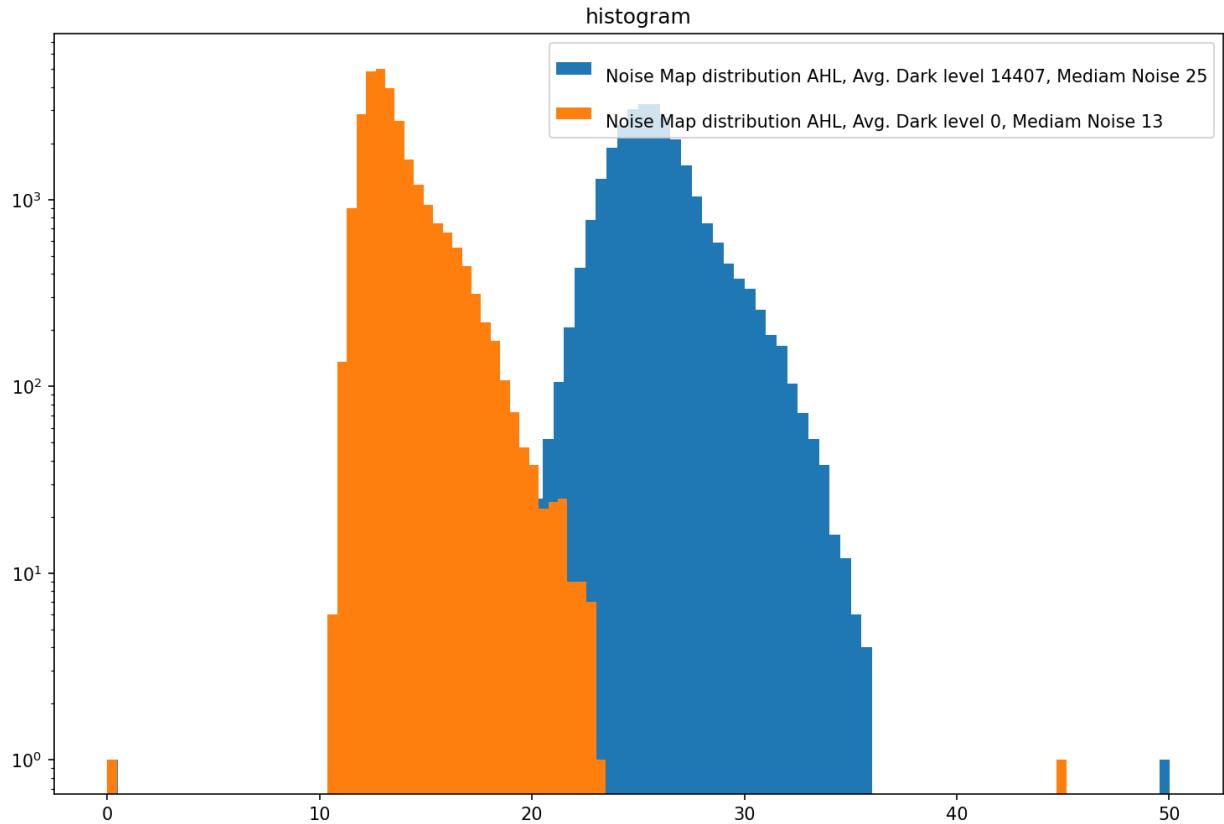
Starting descrambling images

(1000, 56088)

(144, 384)







(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10KTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preamp_7_Vld1b_0_PixelCB_7_Filter_DAC_21_VRrefdac_58_run1.dat

Starting to get data set 0

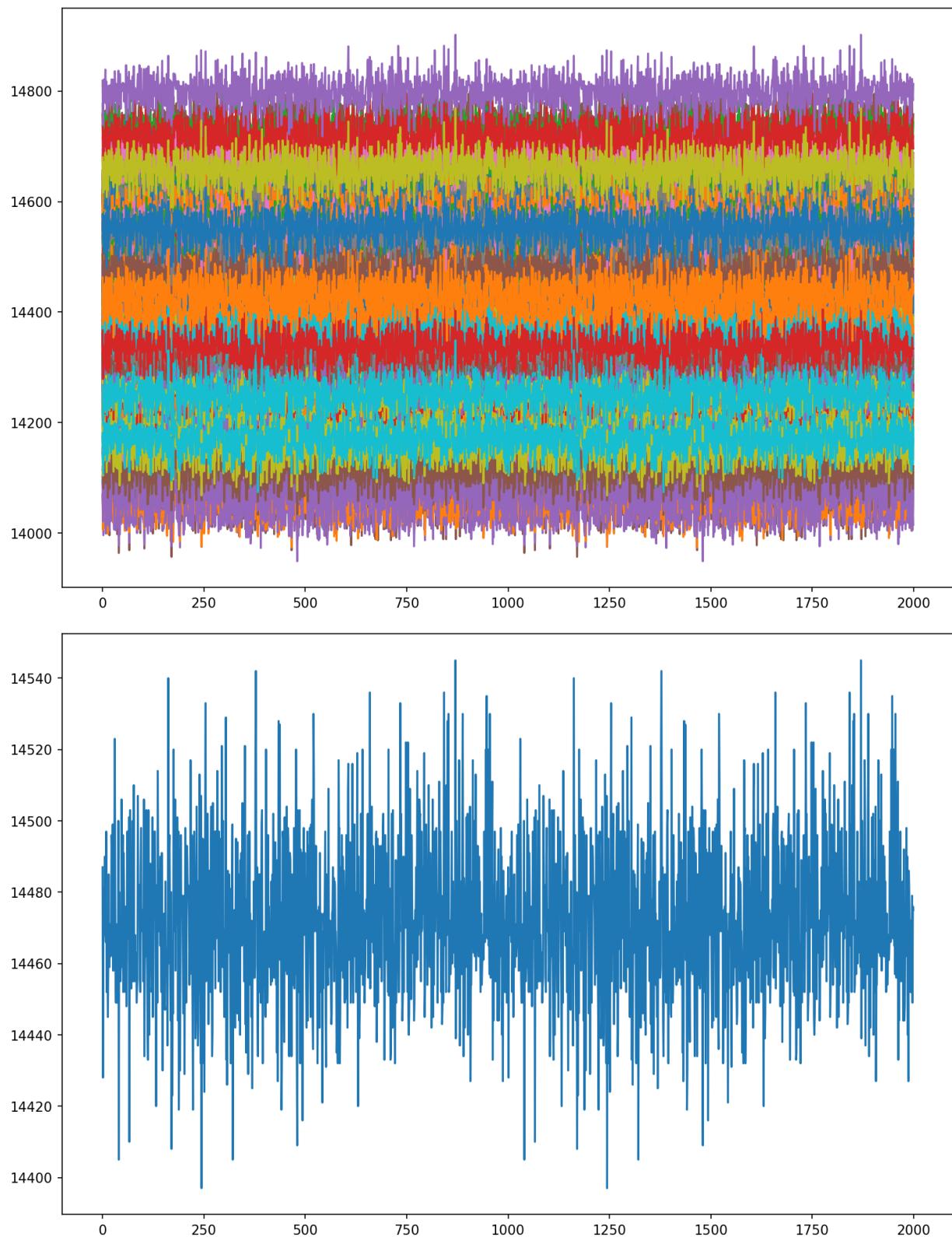
Read 1000 frames

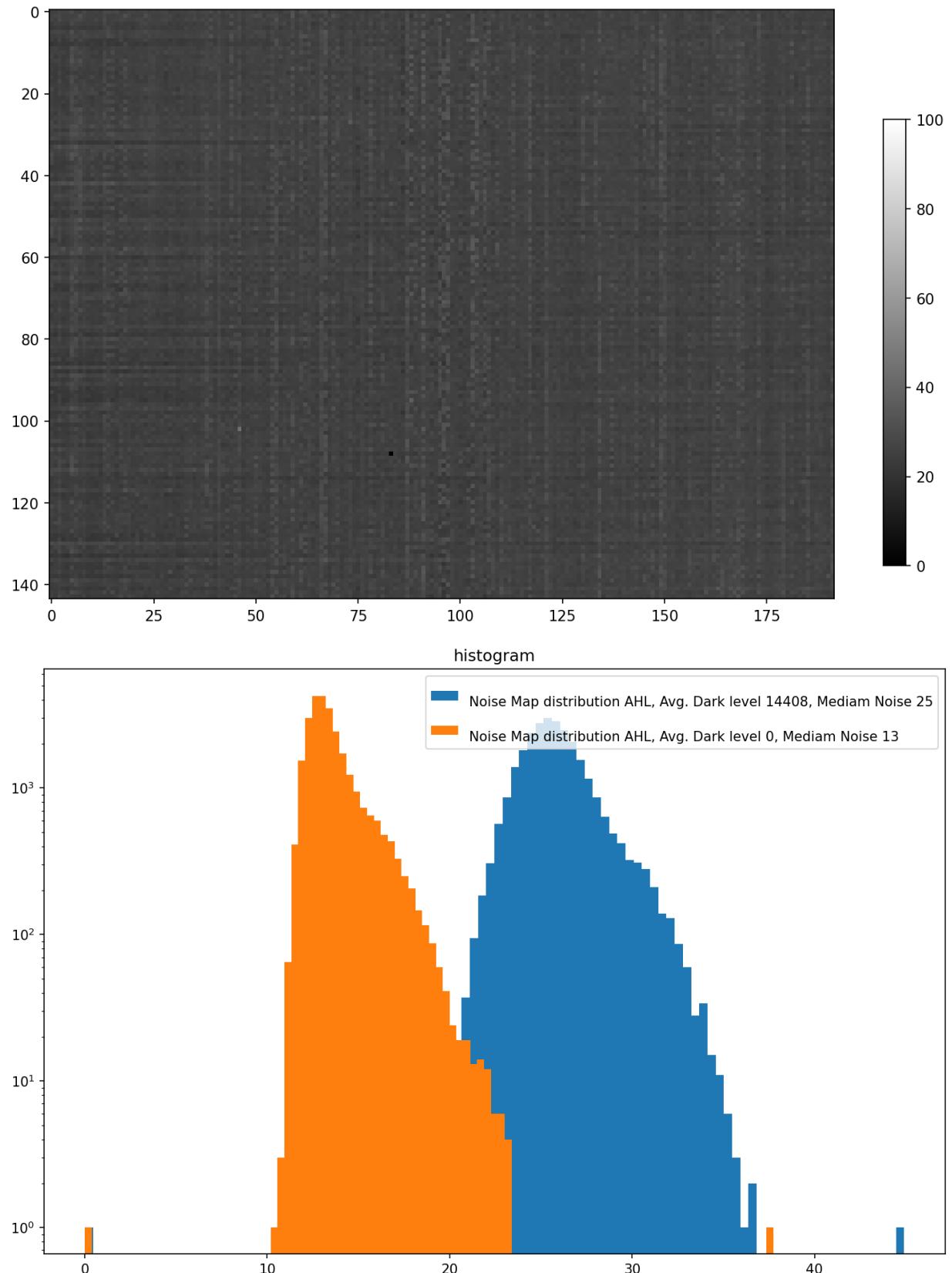
numberOfFrames in the 3D array: 1000

Starting descrambling images

(1000, 56088)

(144, 384)





2/13/23, 4:32 PM

set_0_ePix10KTLCLS-IITiming_ASICv3_320MHz_noise-Analyses-ASIC2_WithStrongBack-HighGain

(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz
_Preamp_7_Vld1b_0_PixelCB_7_Filter_DAC_27_VRrefdac_58_run1.dat

Starting to get data set 0

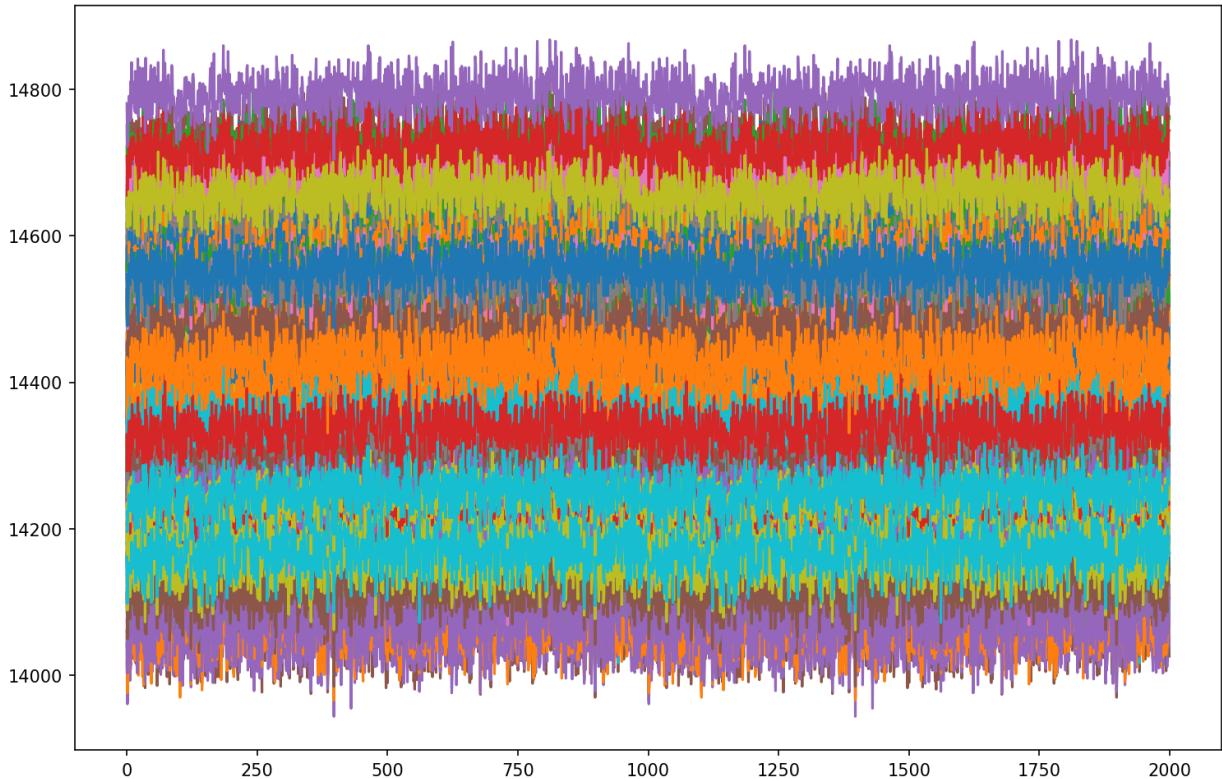
Read 1000 frames

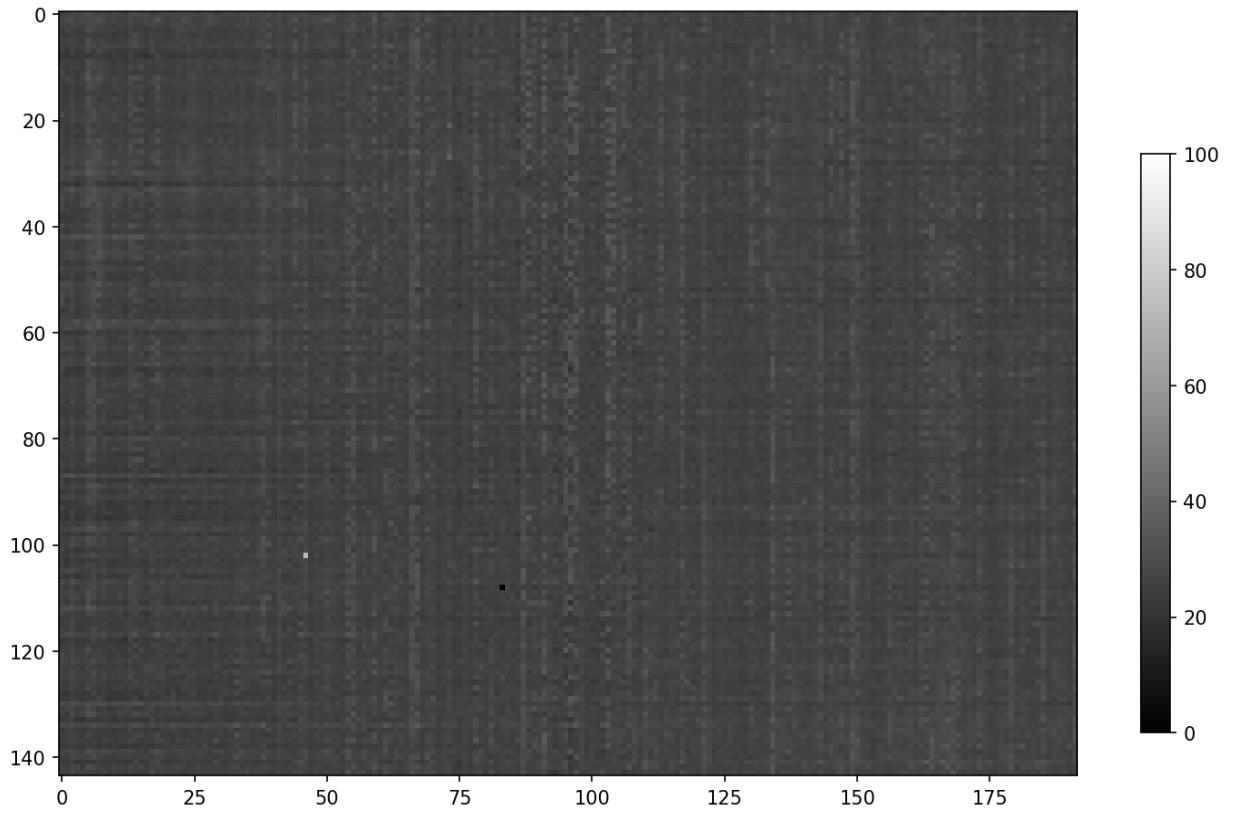
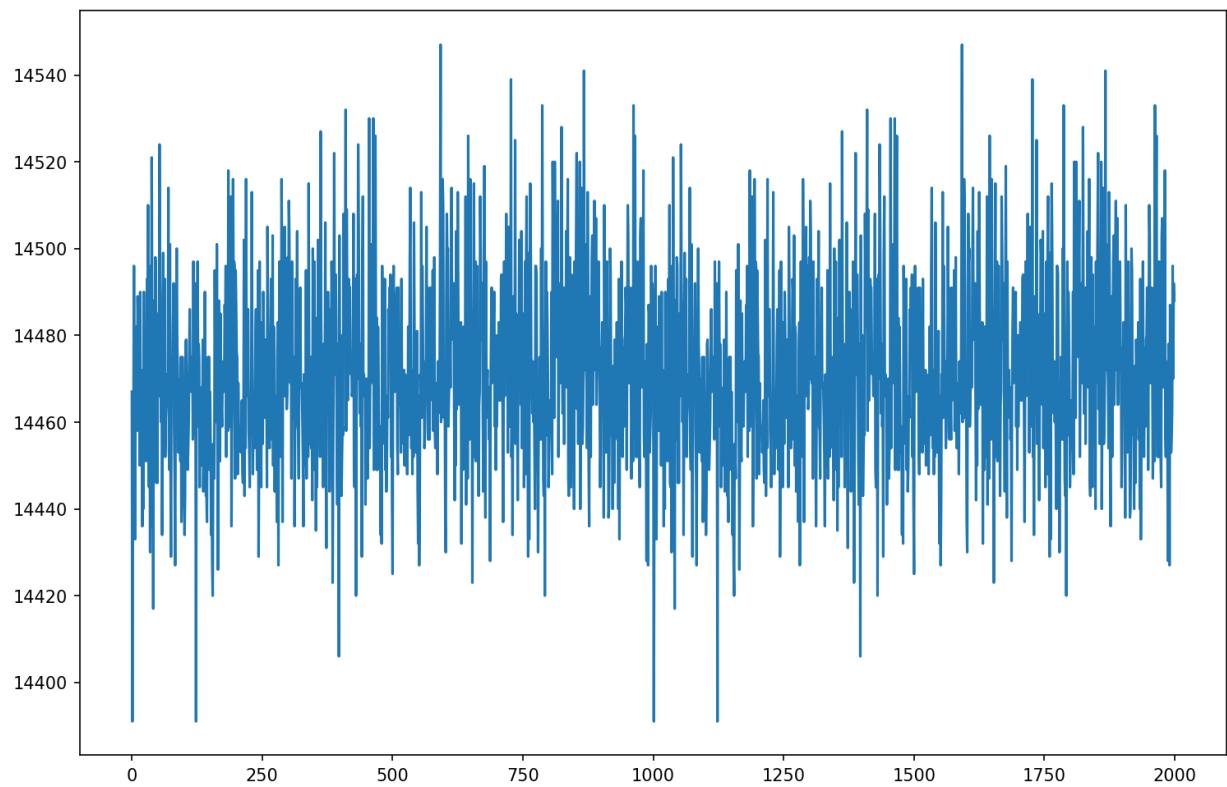
numberOfFrames in the 3D array: 1000

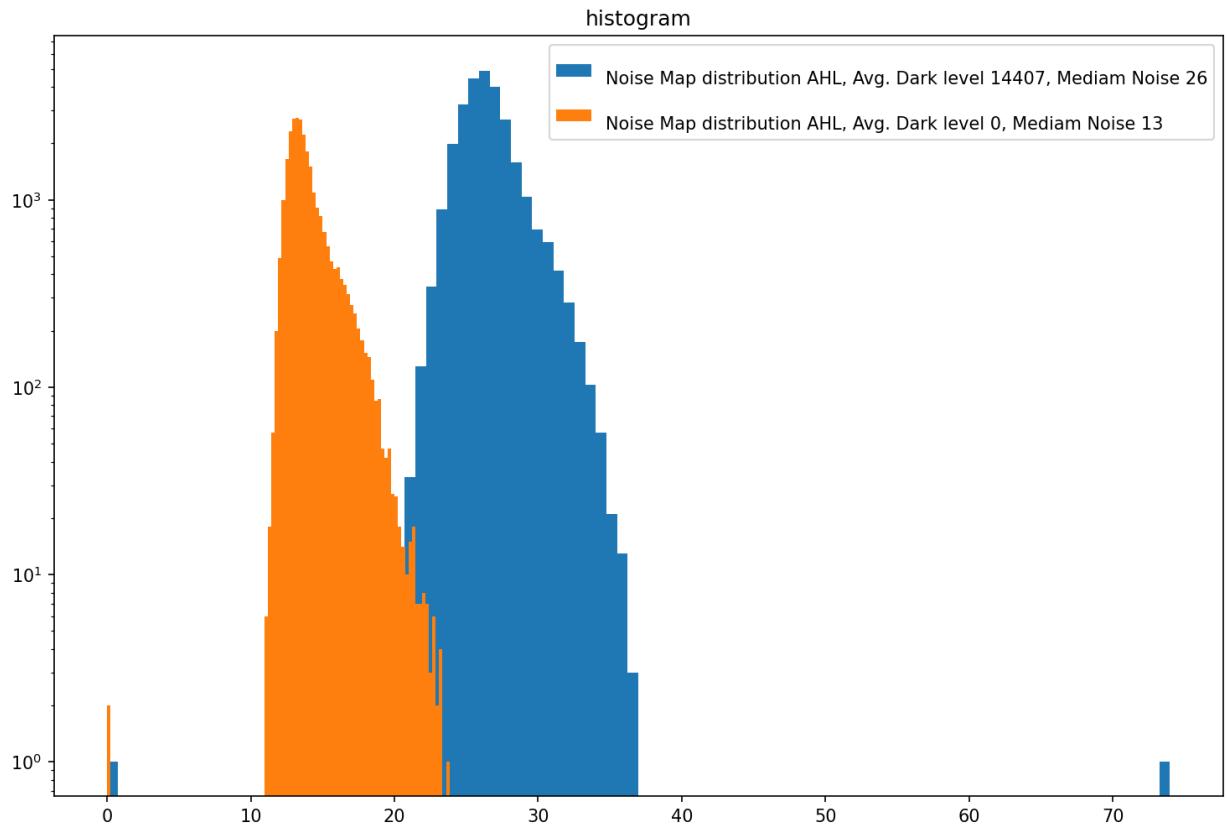
Starting descrambling images

(1000, 56088)

(144, 384)







(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10KTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preampl_7_Vld1b_0_PixelCB_7_Filter_DAC_37_VRrefdac_58_run1.dat

Starting to get data set 0

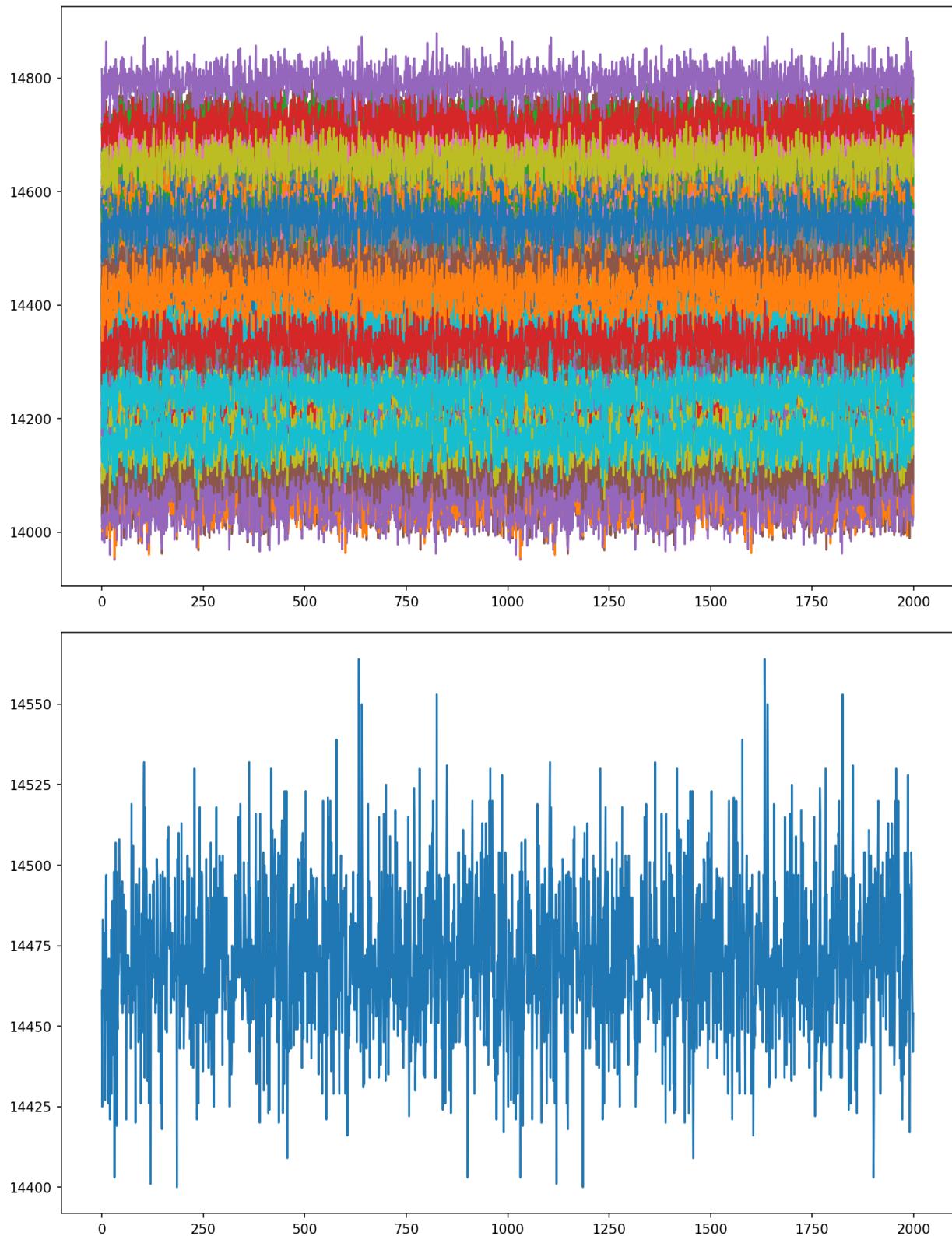
Read 1000 frames

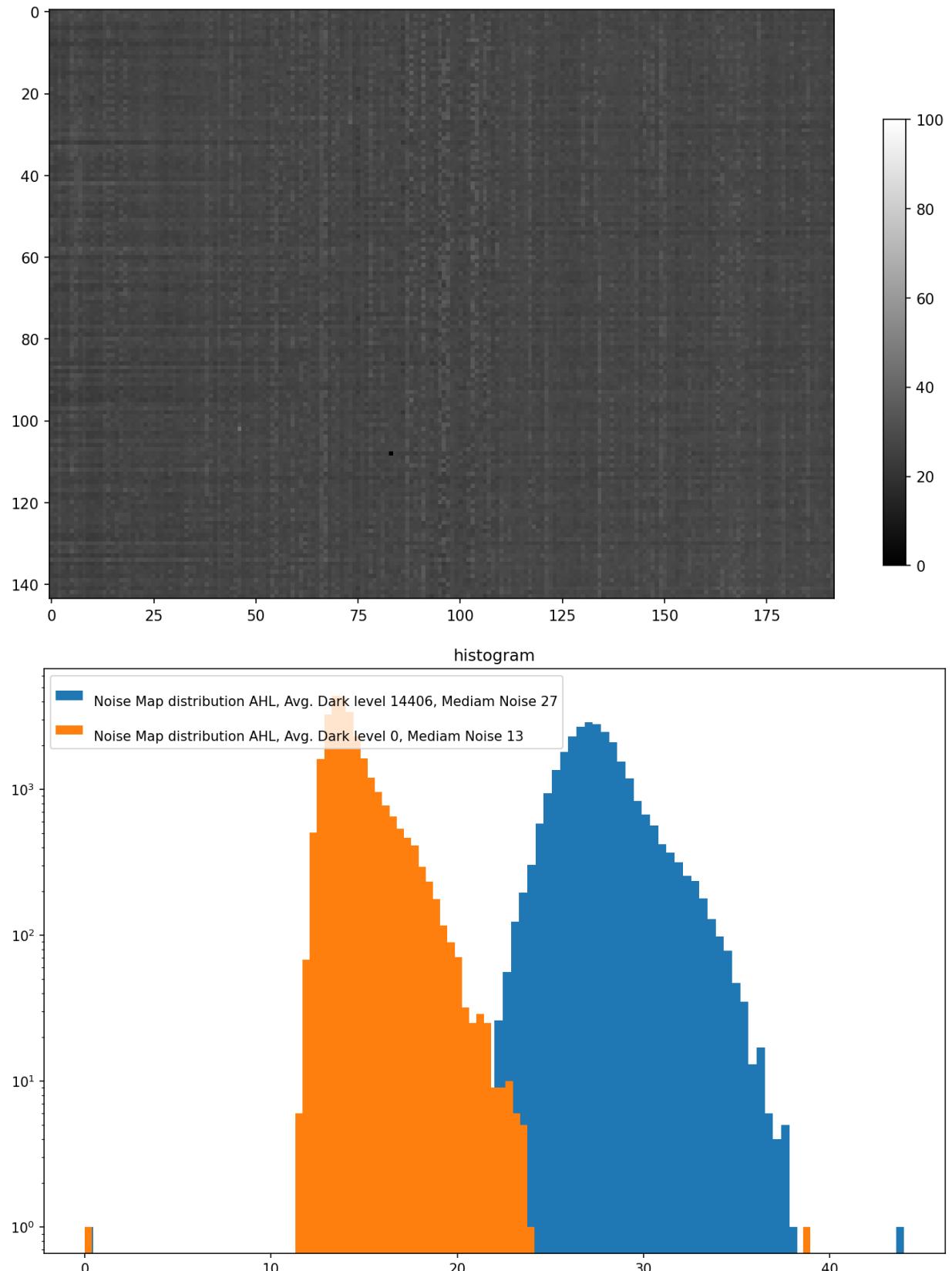
numberOfFrames in the 3D array: 1000

Starting descrambling images

(1000, 56088)

(144, 384)





2/13/23, 4:32 PM

set_0_ePix10KTLCLS-IIITiming_ASICv3_320MHz_noise-Analyses-ASIC2_WithStrongBack-HighGain

(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz
_Preamp_7_Vld1b_0_PixelCB_7_Filter_DAC_47_VRrefdac_58_run1.dat

Starting to get data set 0

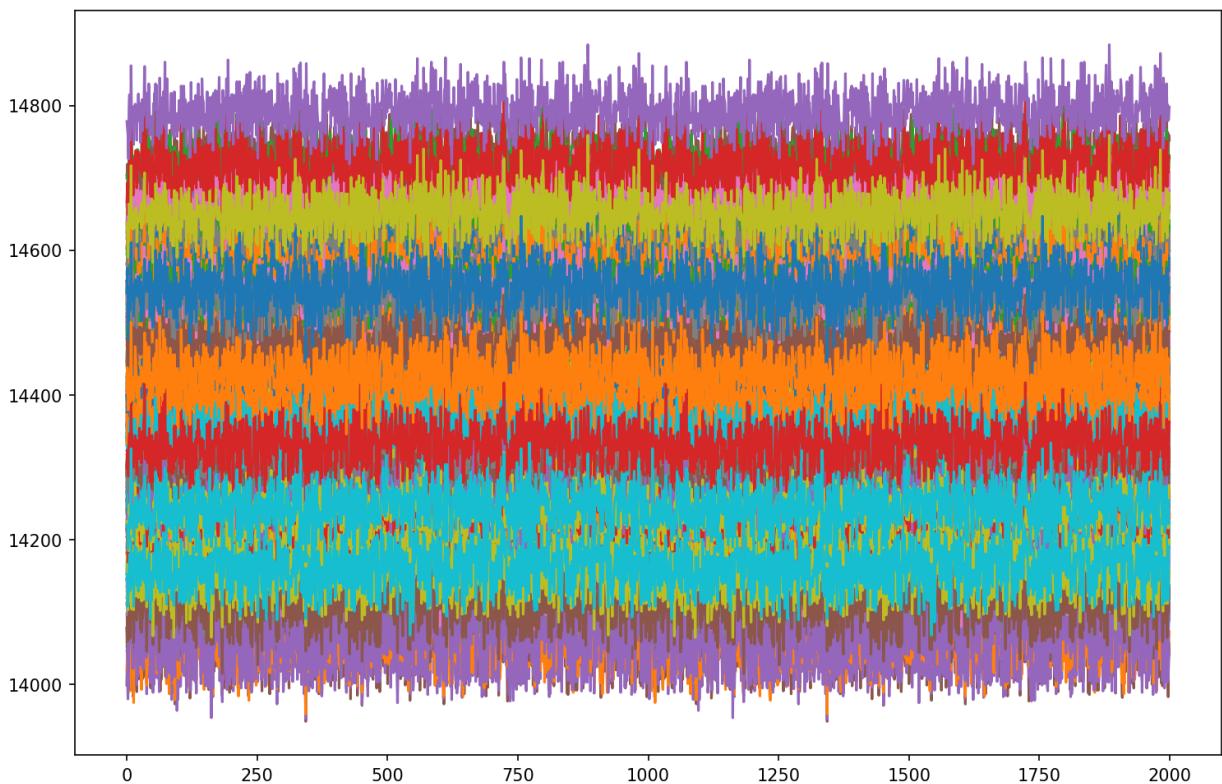
Read 1000 frames

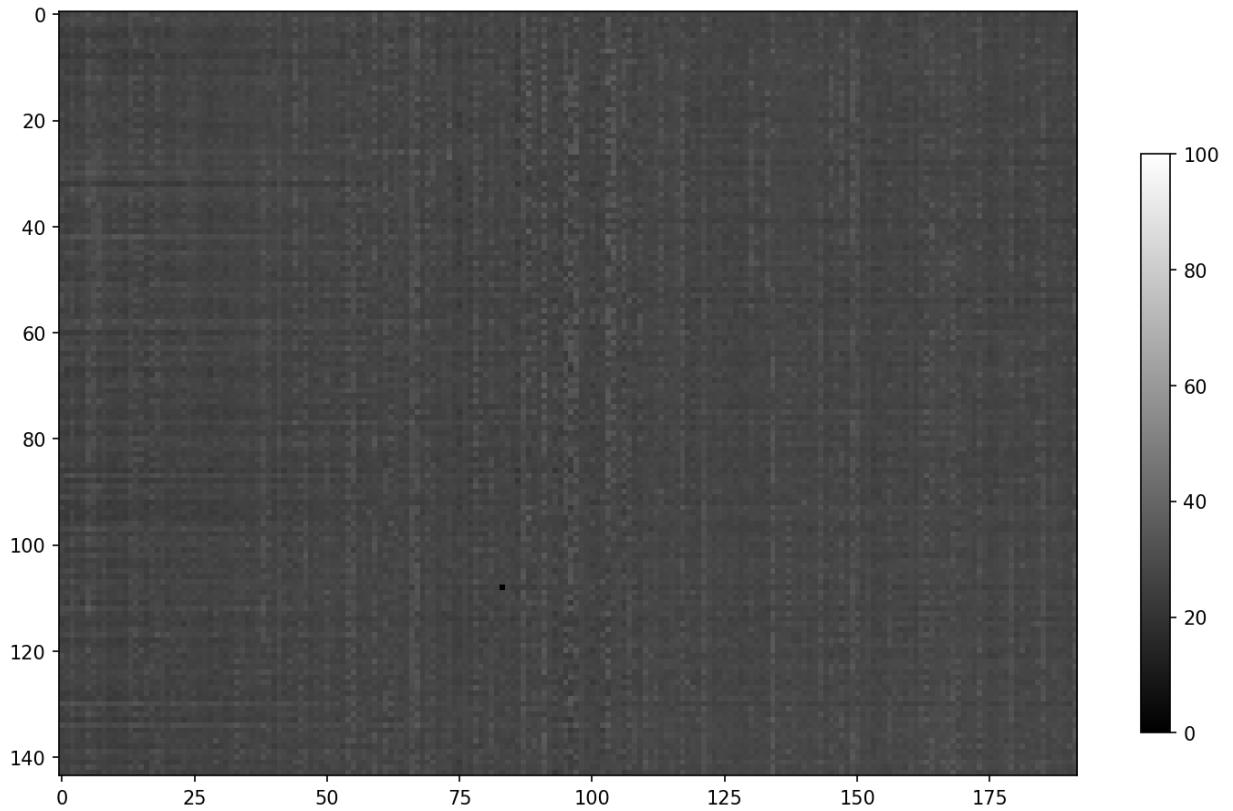
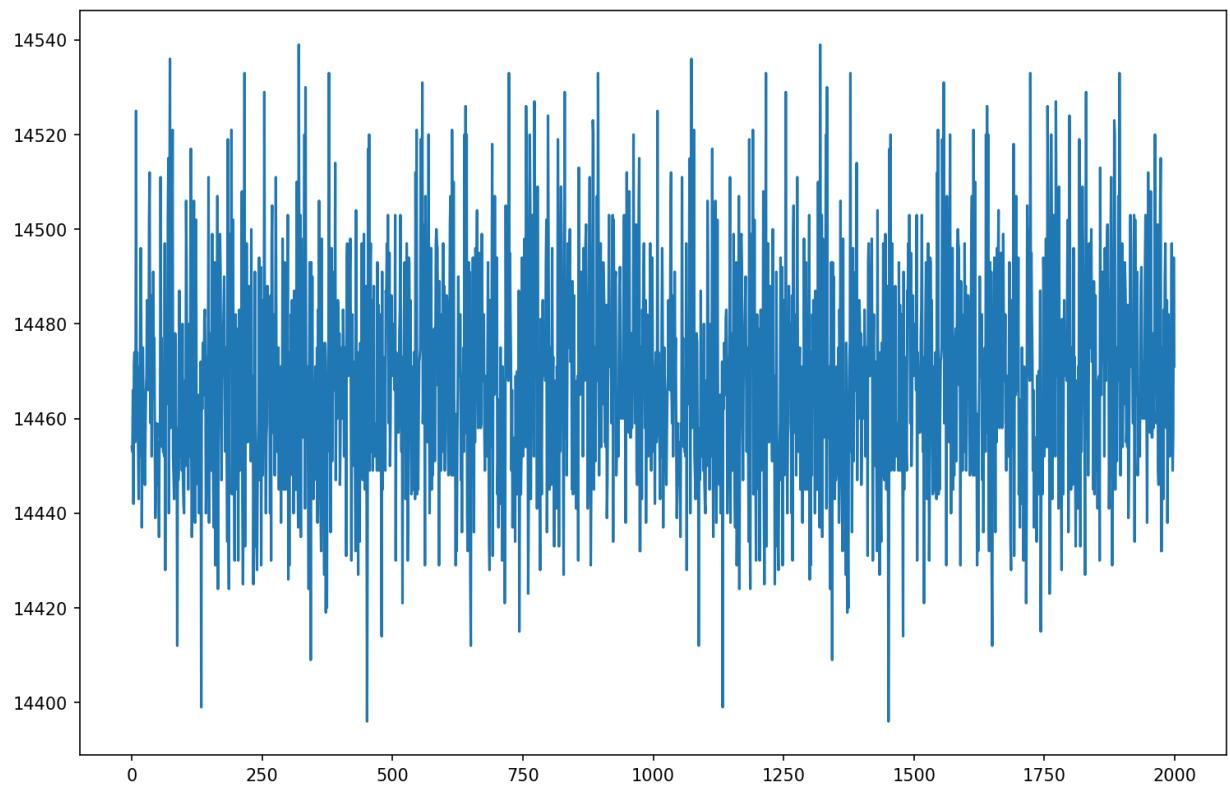
numberOfFrames in the 3D array: 1000

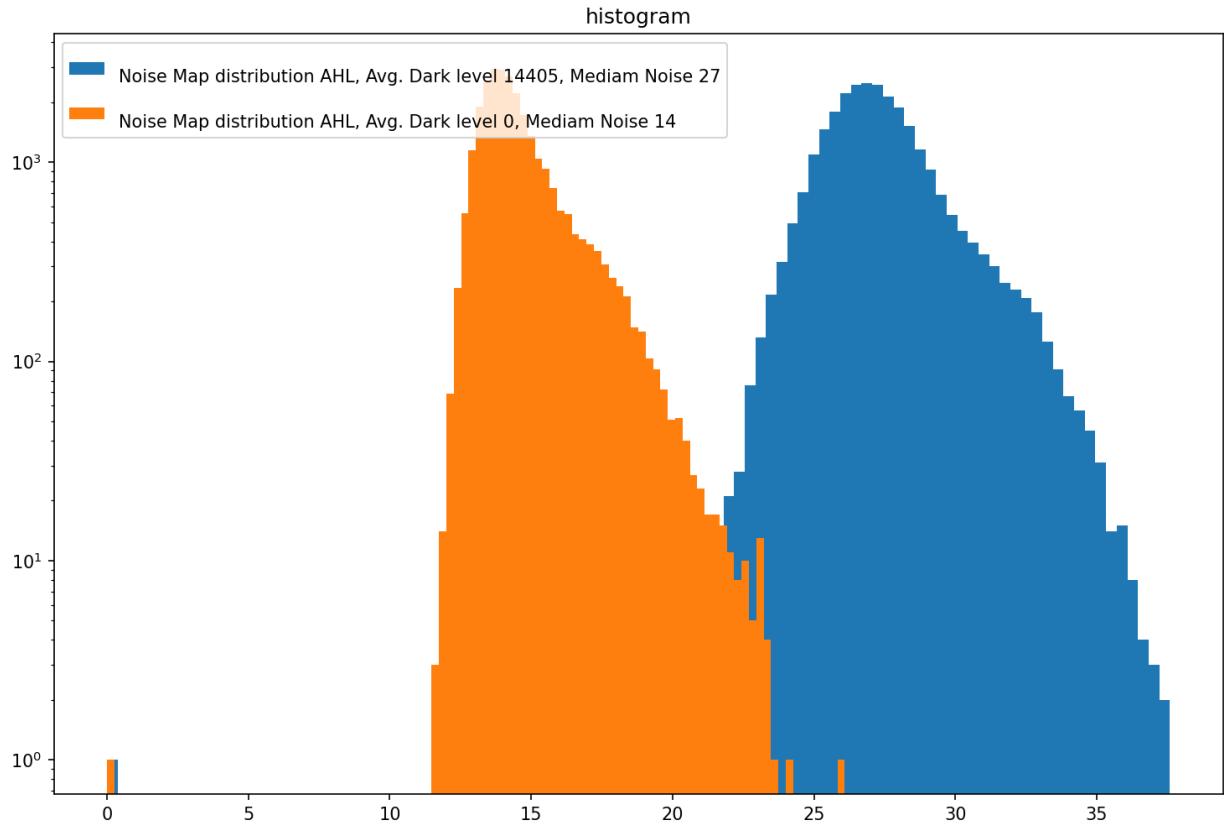
Starting descrambling images

(1000, 56088)

(144, 384)







(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10KTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preamp_7_Vld1b_0_PixelCB_7_Filter_DAC_57_VRrefdac_58_run1.dat

Starting to get data set 0

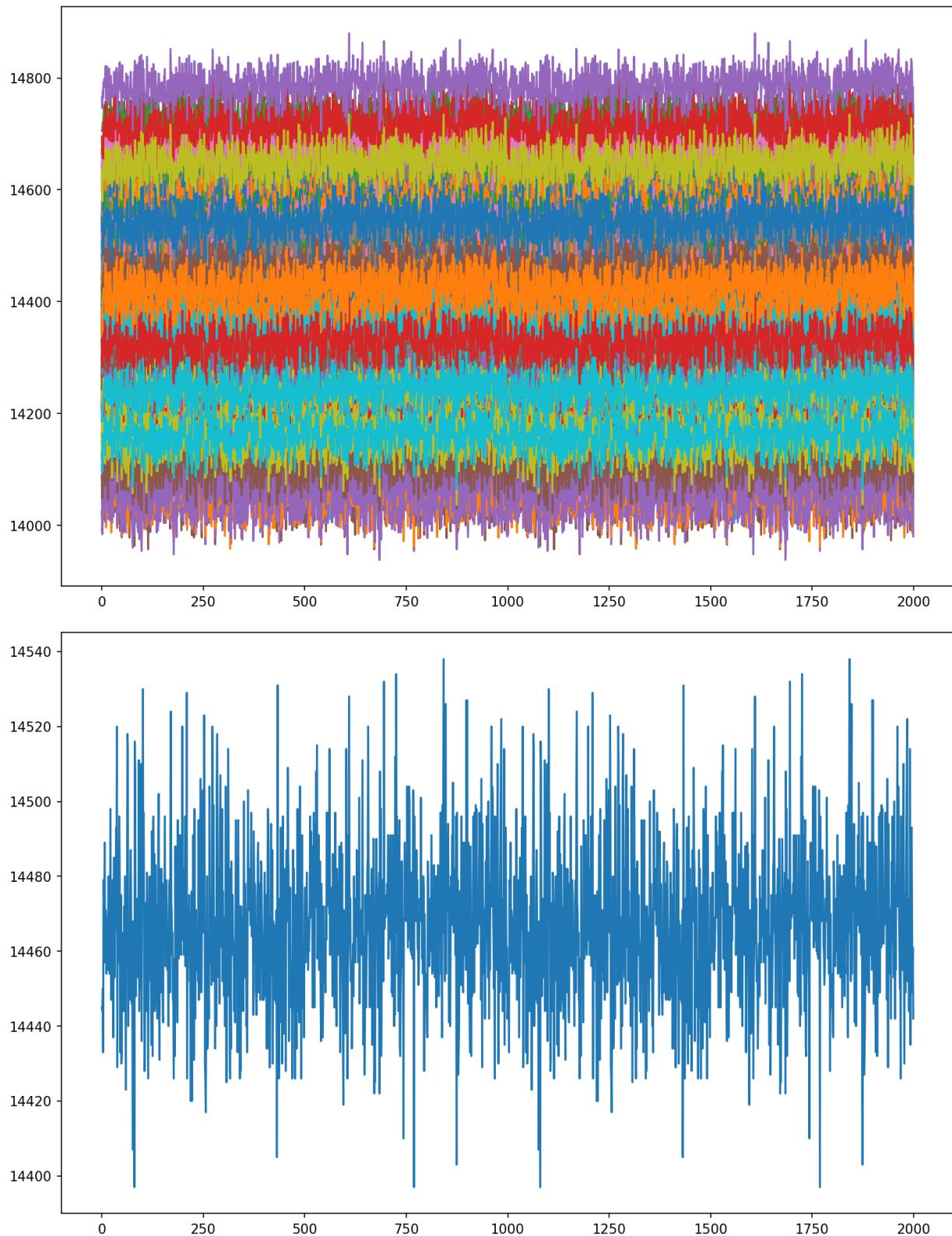
Read 1000 frames

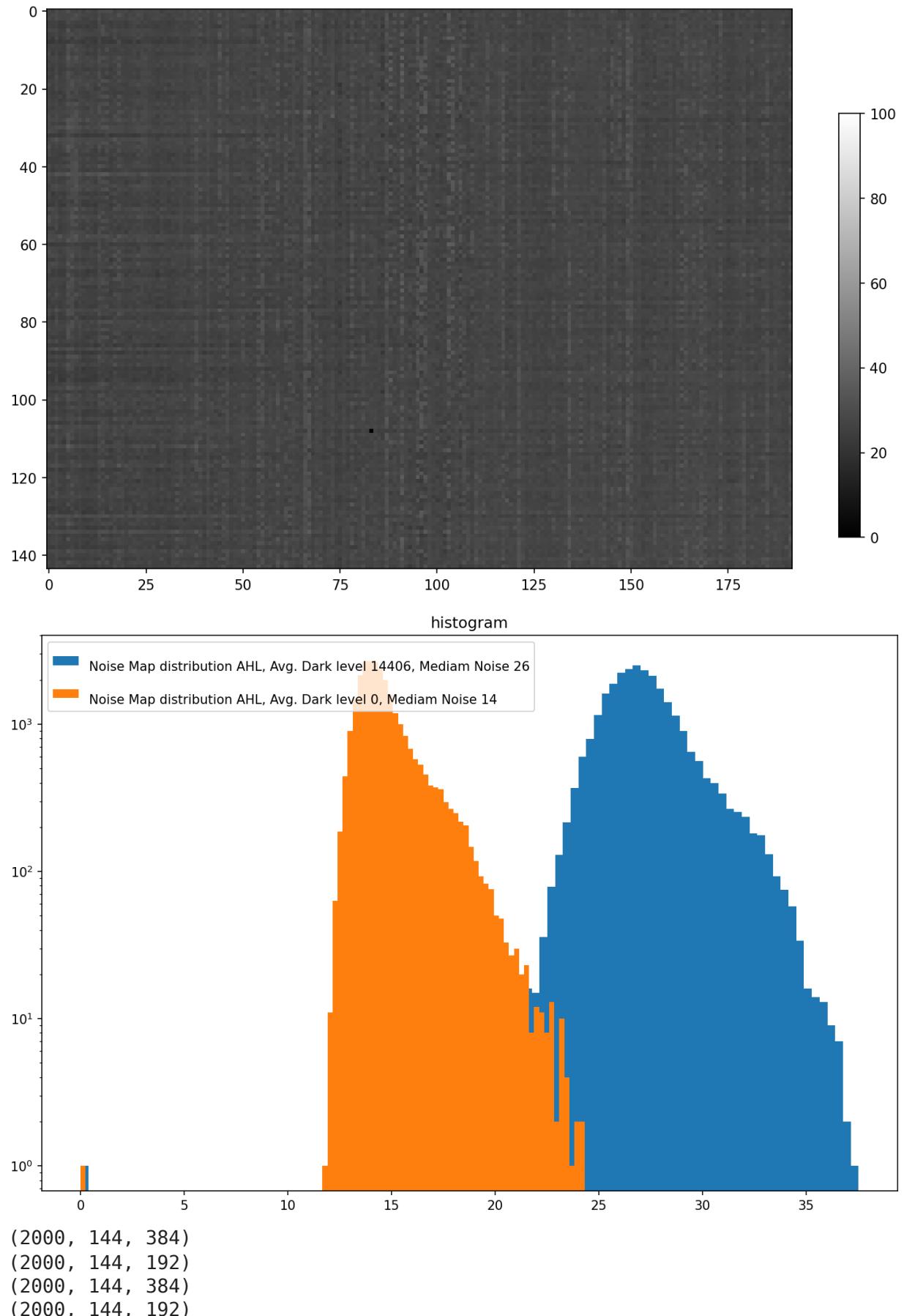
numberOfFrames in the 3D array: 1000

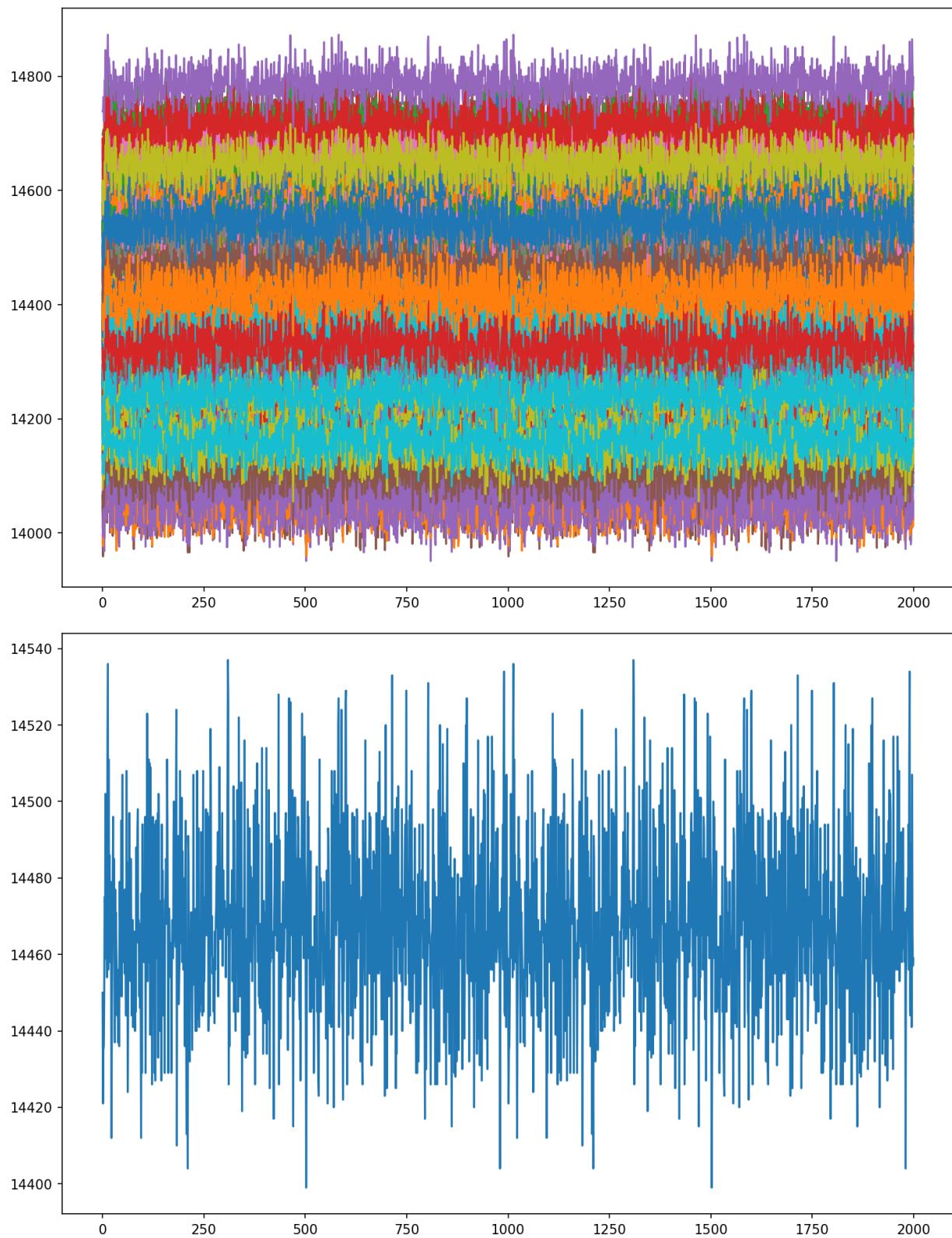
Starting descrambling images

(1000, 56088)

(144, 384)







```
In [34]: #Makes sure triggers are off
```

```
Preamp = 7  
Vld1_b = 0  
Pixel_CB= 7  
Filter_DAC=17  
VRef_DACList = [3, 13, 23, 33, 43, 48, 53, 58, 63]  
  
for VRef_DAC in VRef_DACList:
```

```
#####
# Remove previous dataset
filename = (f'/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_
#####
imgDesc = read_asic_test()
#####
[noiseMap, darkAvg] = noise_print(0)
```

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz
_Preamp_7_Vld1b_0_PixelCB_7_Filter_DAC_17_VRrefdac_3_run1.dat

Starting to get data set 0

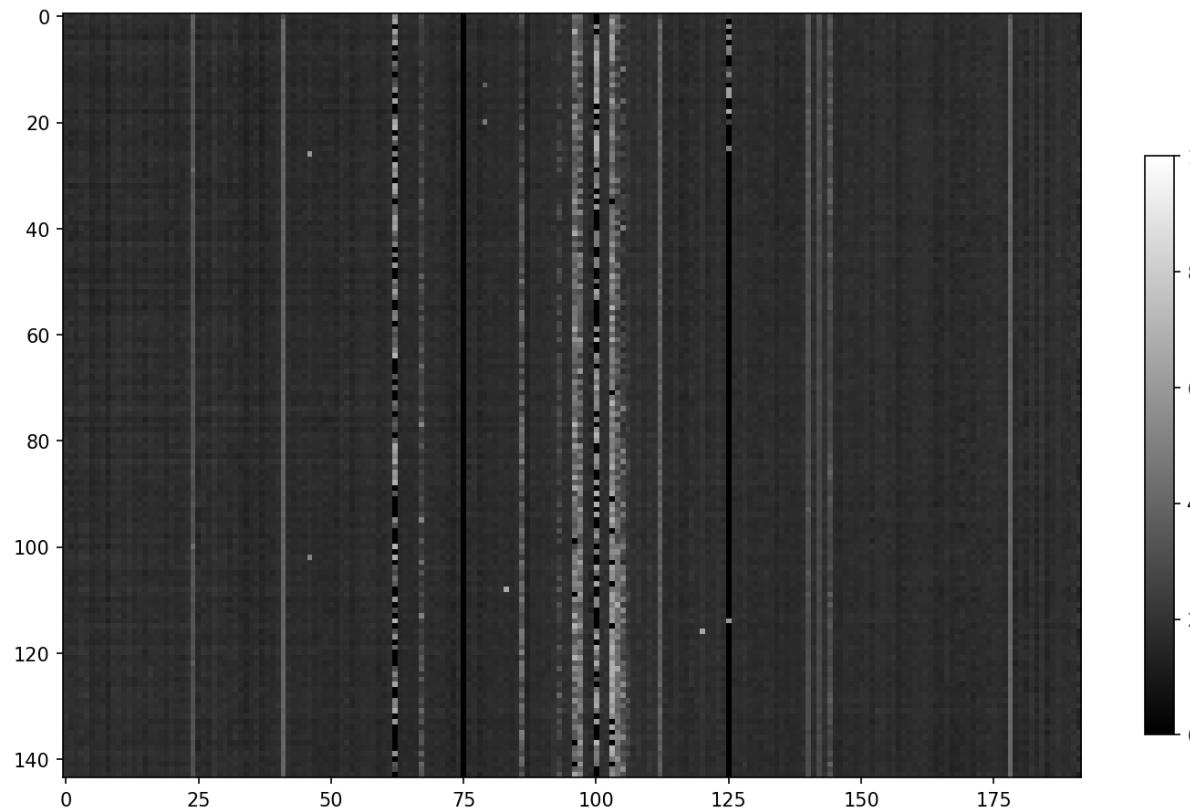
Read 1000 frames

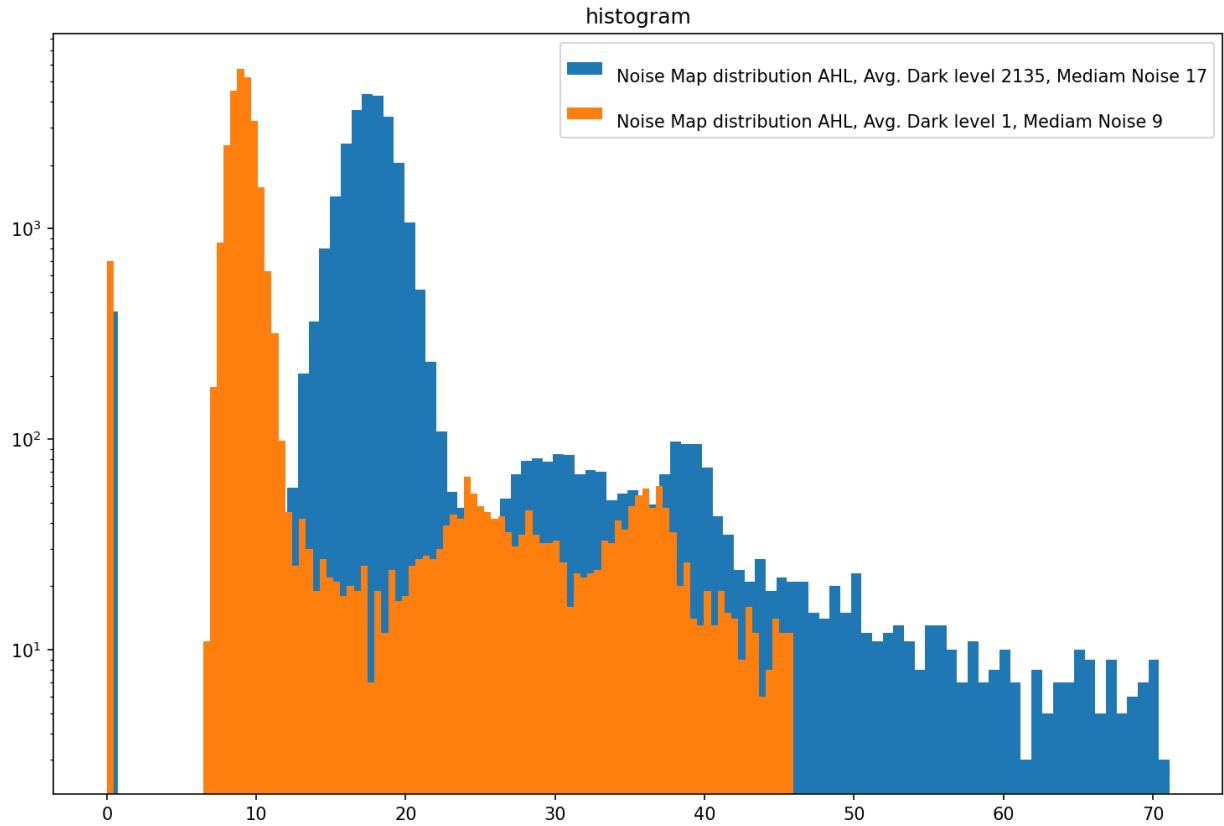
numberOfFrames in the 3D array: 1000

Starting descrambling images

(1000, 56088)

(144, 384)





(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10KTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preampl_7_Vld1b_0_PixelCB_7_Filter_DAC_17_VRrefdac_13_run1.dat

Starting to get data set 0

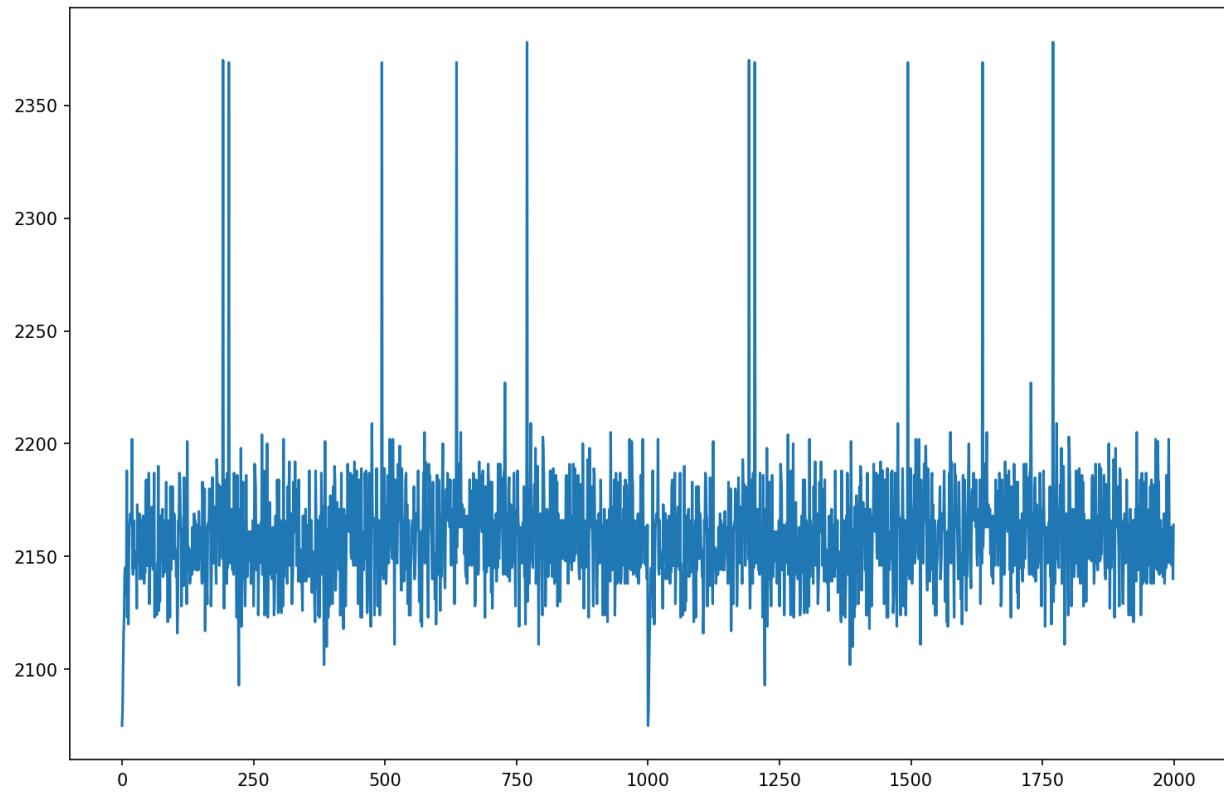
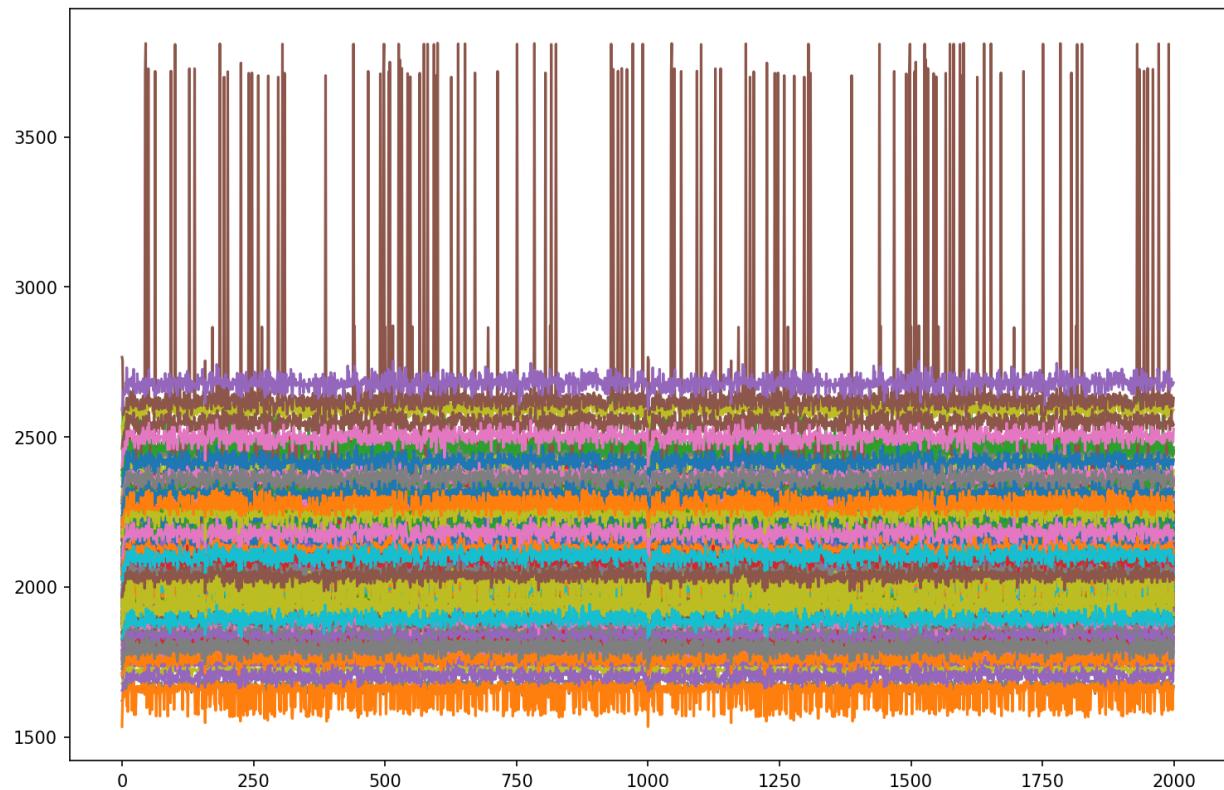
Read 1000 frames

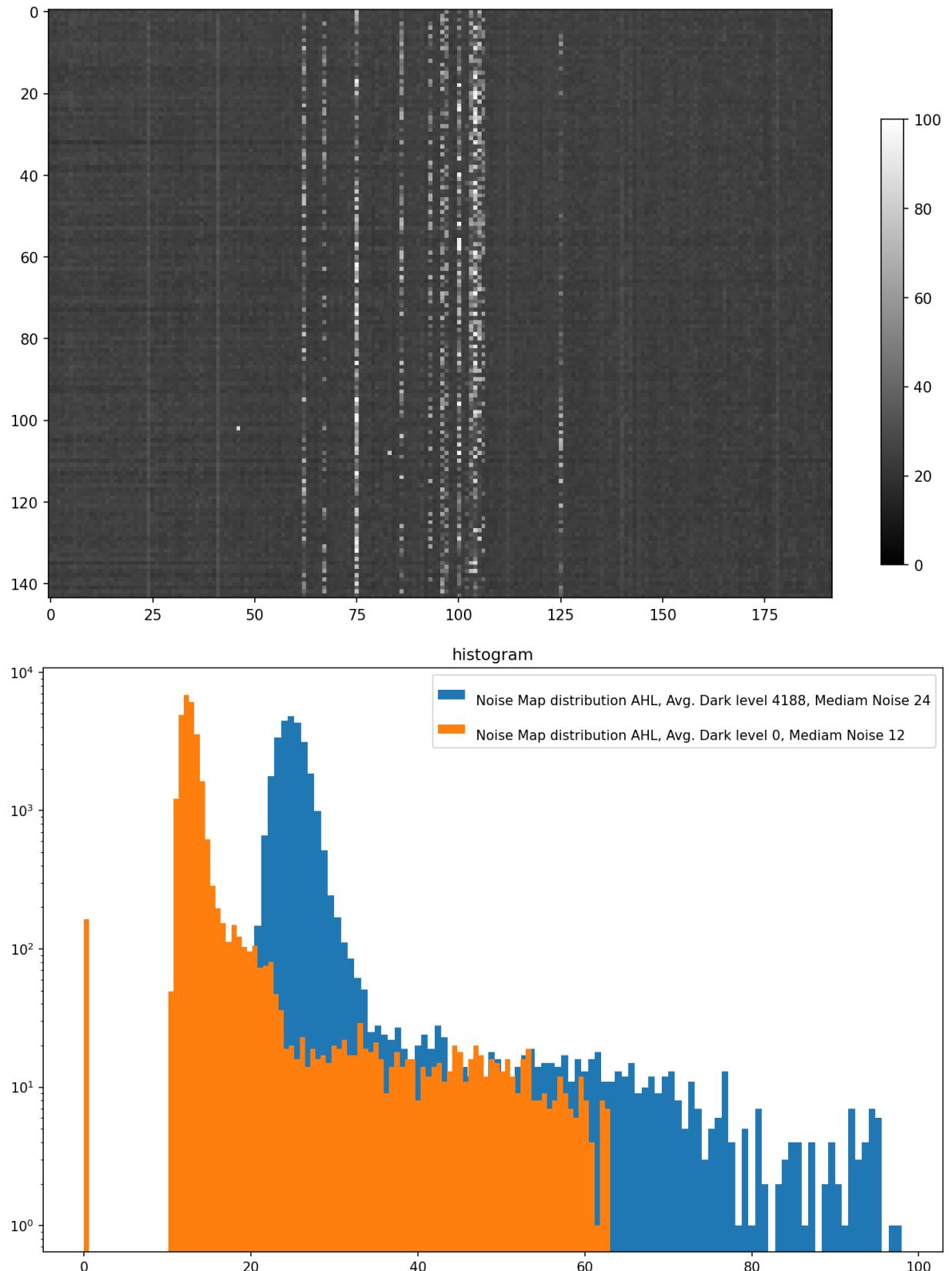
numberOfFrames in the 3D array: 1000

Starting descrambling images

(1000, 56088)

(144, 384)





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set_0_ePix10KTLCLS-IITiming_ASICv3_320MHz_noise-Analyses-ASIC2_WithStrongBack-HighGain

(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz
_Preamp_7_Vld1b_0_PixelCB_7_Filter_DAC_17_VRrefdac_23_run1.dat

Starting to get data set 0

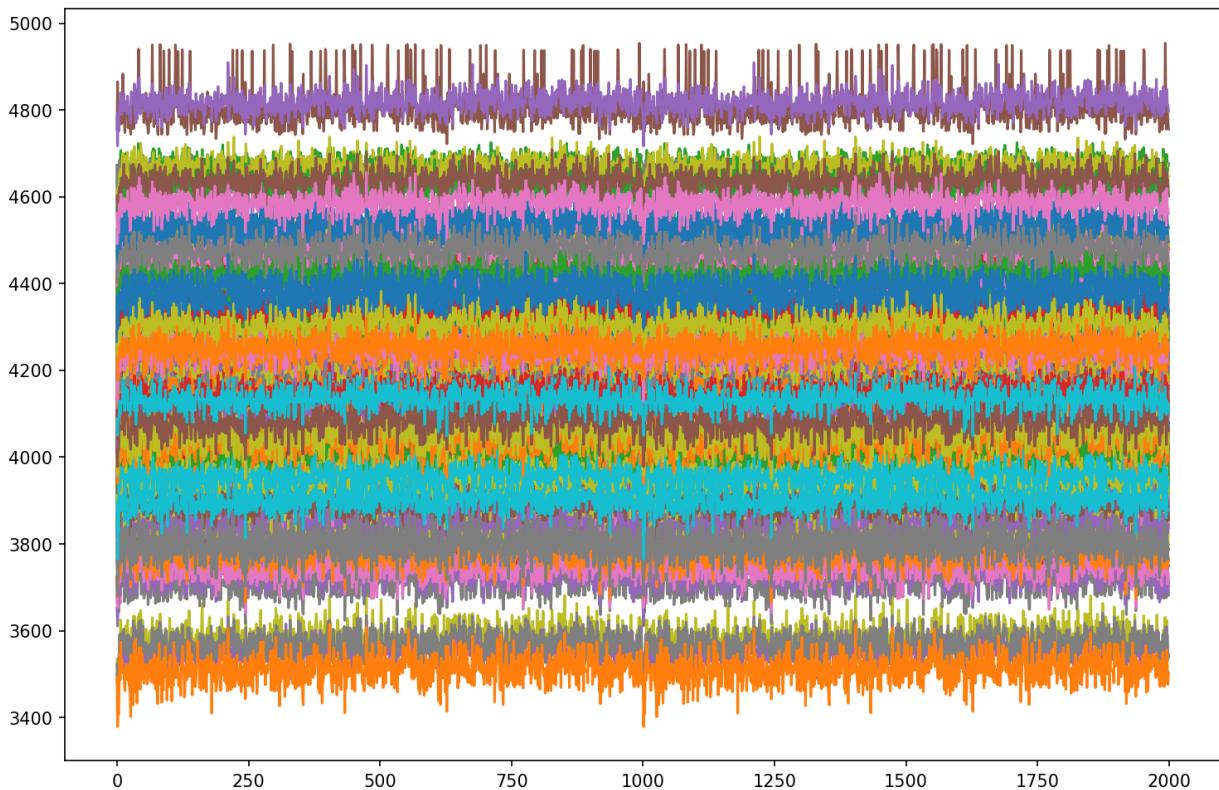
Read 1000 frames

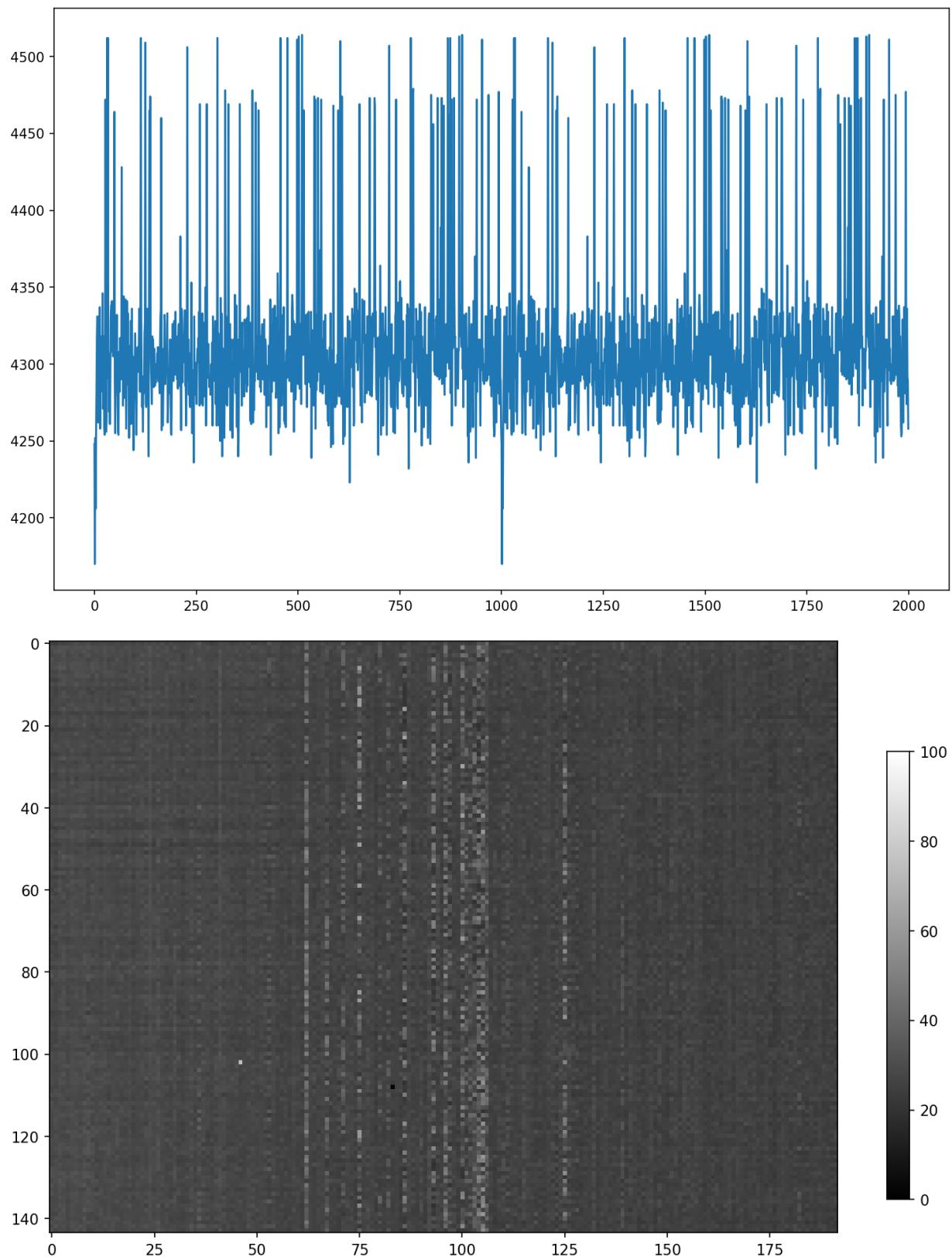
numberOfFrames in the 3D array: 1000

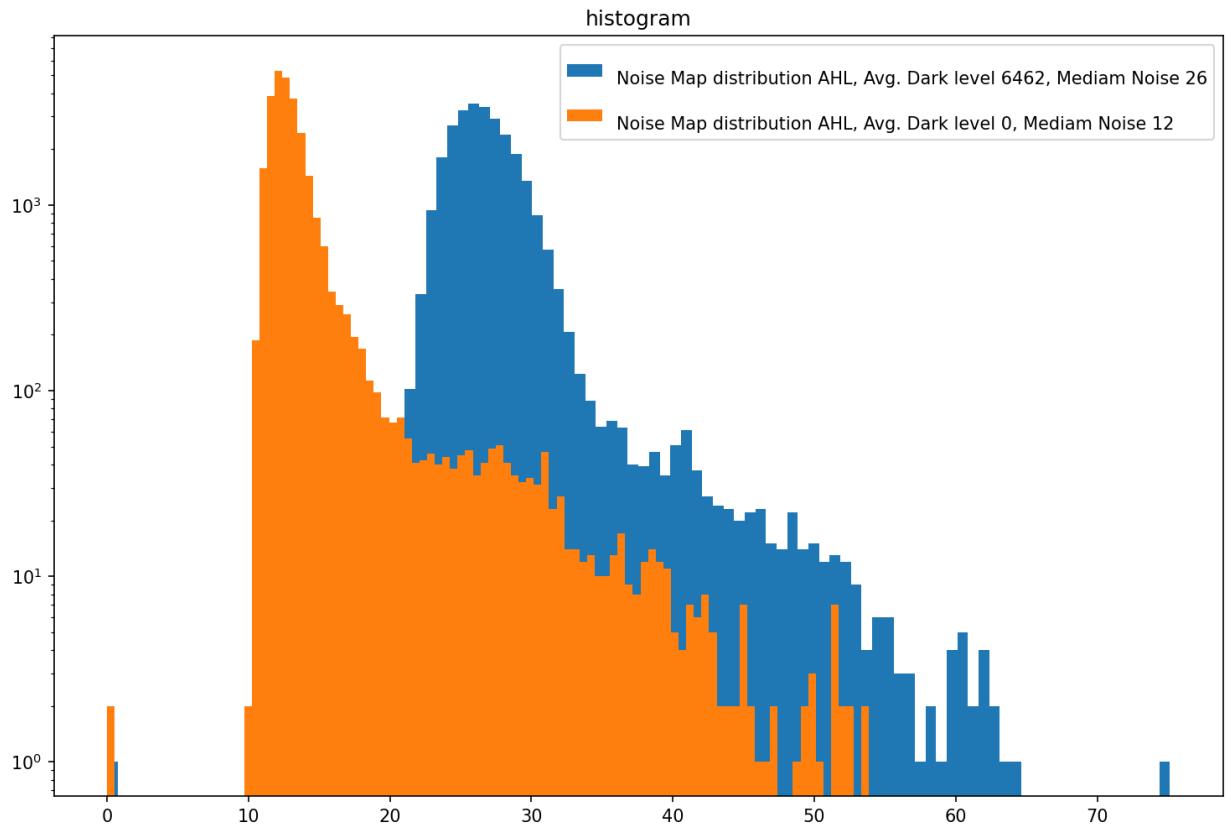
Starting descrambling images

(1000, 56088)

(144, 384)







(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10KTLCLSIITiming_ASICV3_ASIC2_noise_320MHz_Preampl_7_Vld1b_0_PixelCB_7_Filter_DAC_17_VRrefdac_33_run1.dat

Starting to get data set 0

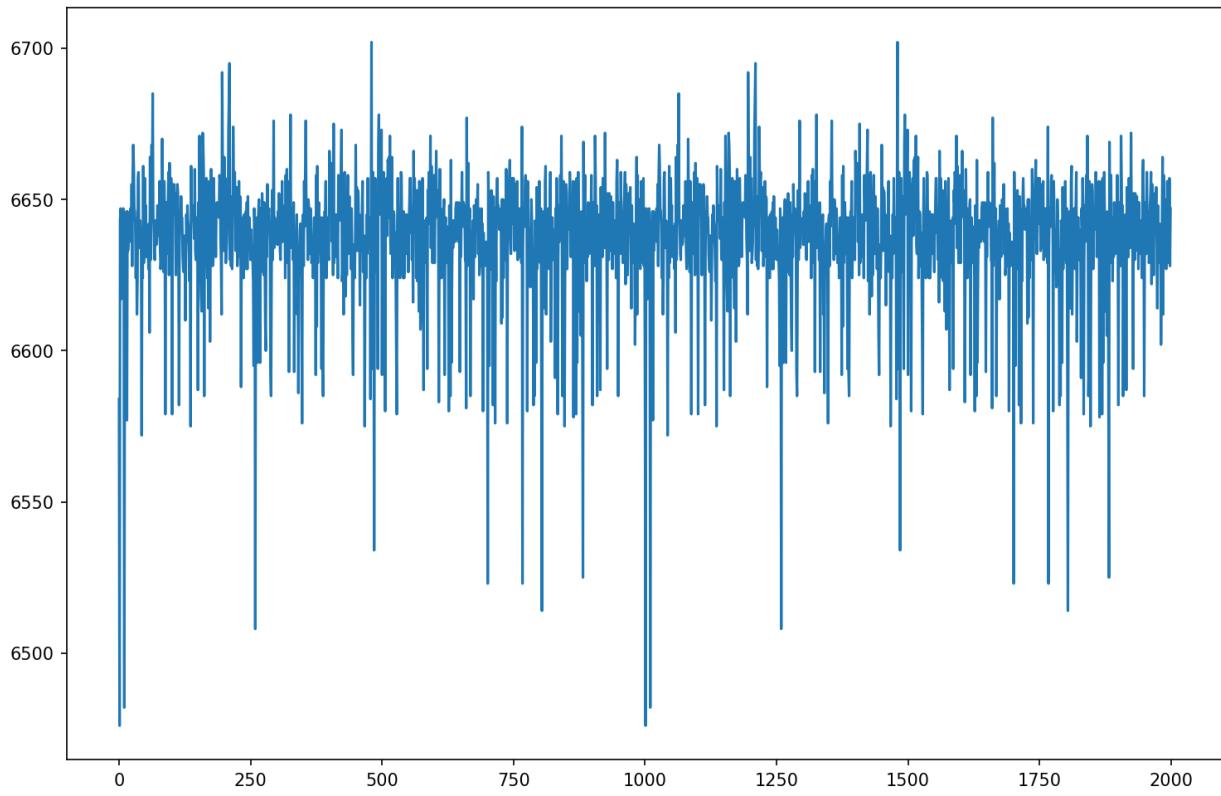
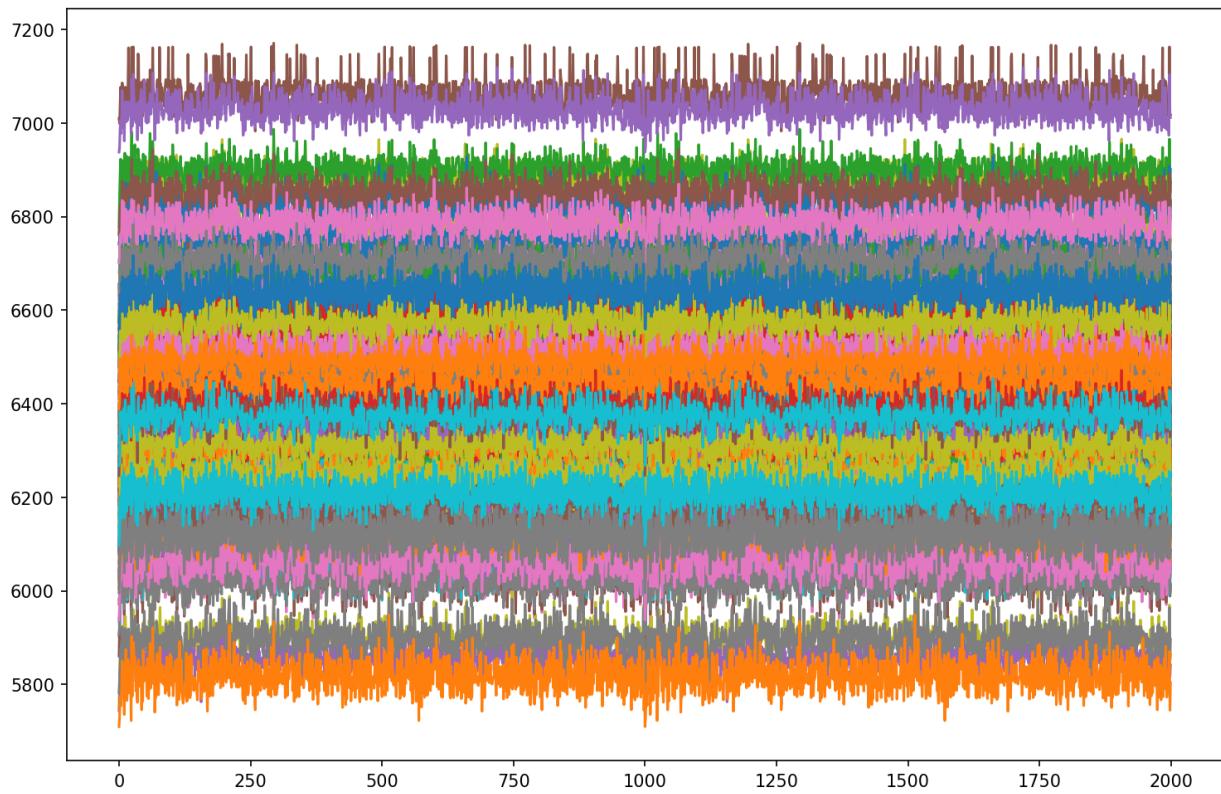
Read 1000 frames

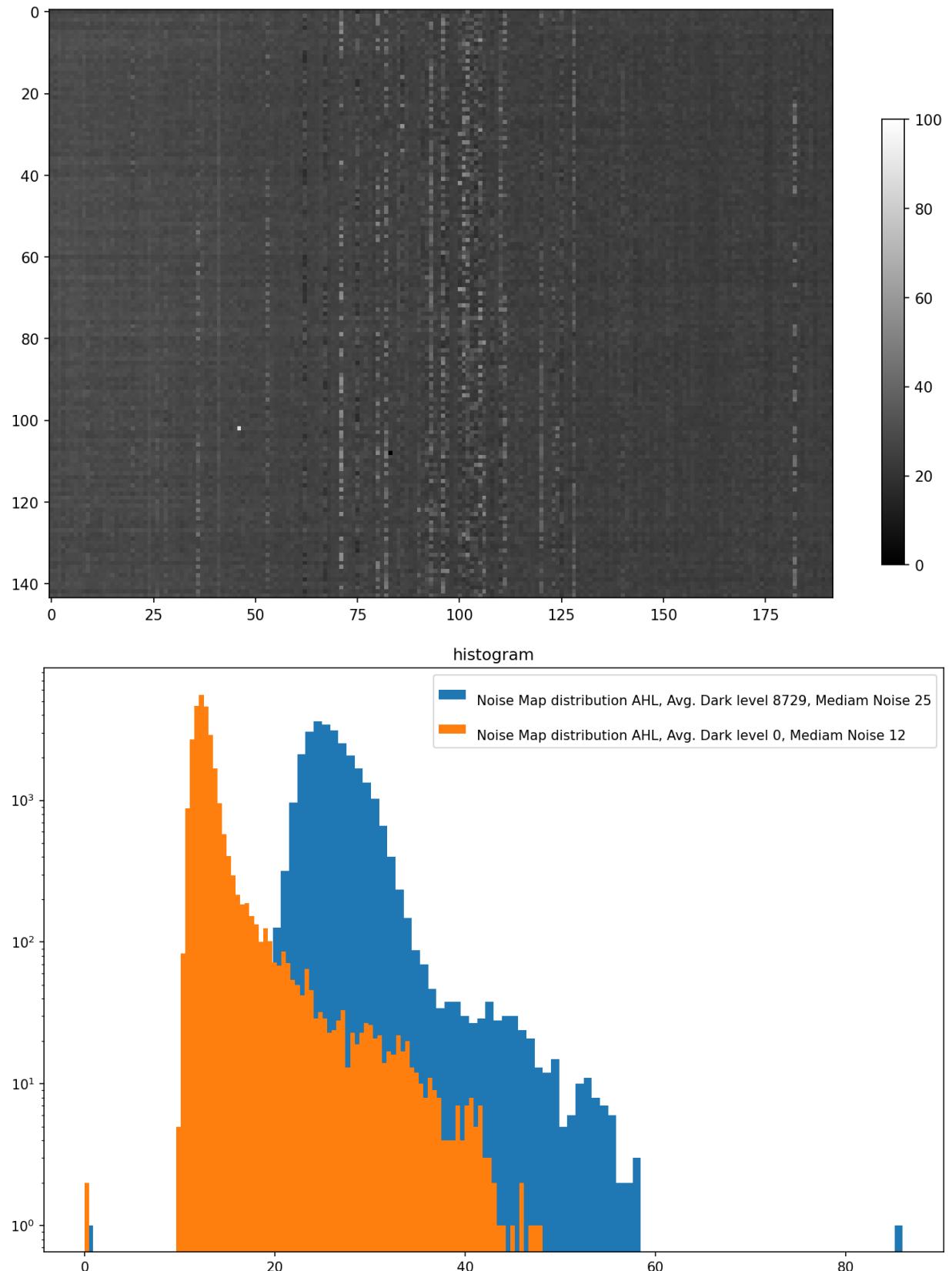
numberOfFrames in the 3D array: 1000

Starting descrambling images

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(144, 384)





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set_0_ePix10KTLCLS-IIITiming_ASICv3_320MHz_noise-Analyses-ASIC2_WithStrongBack-HighGain

(2000, 144, 384)

(2000, 144, 192)

(2000, 144, 384)

(2000, 144, 192)

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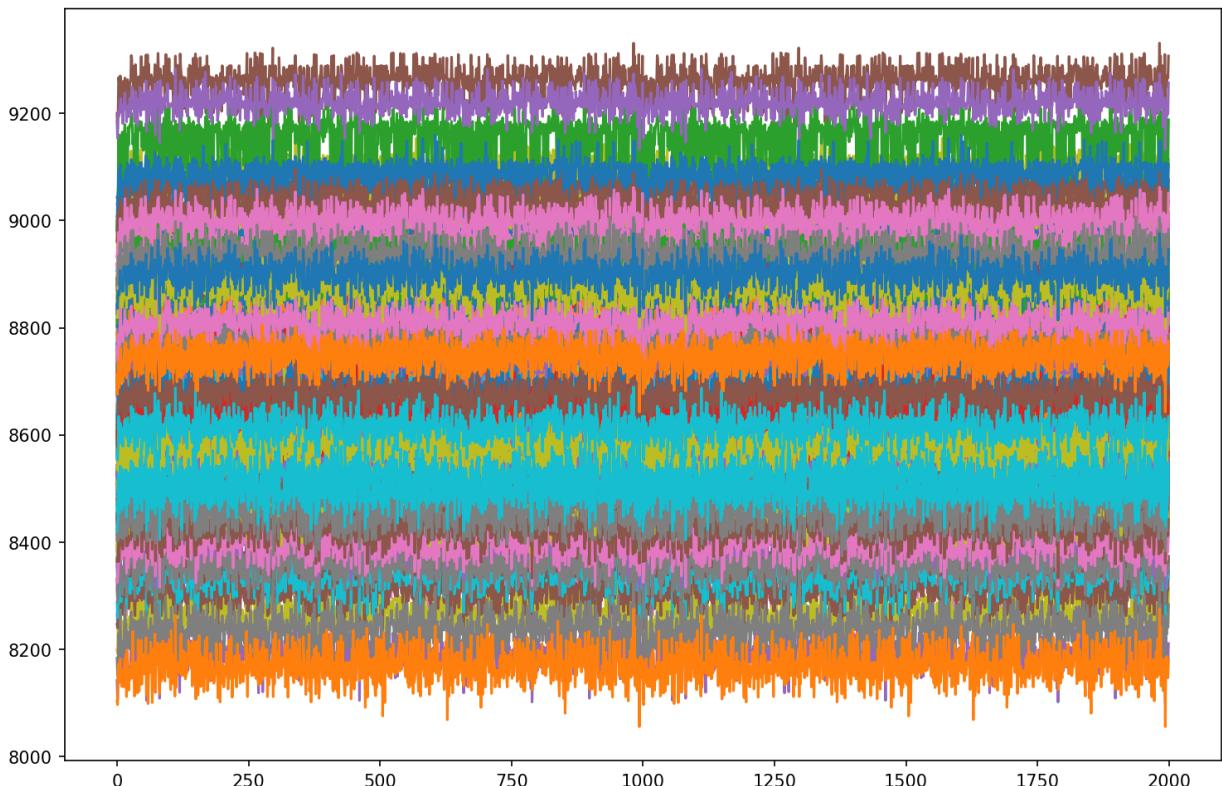
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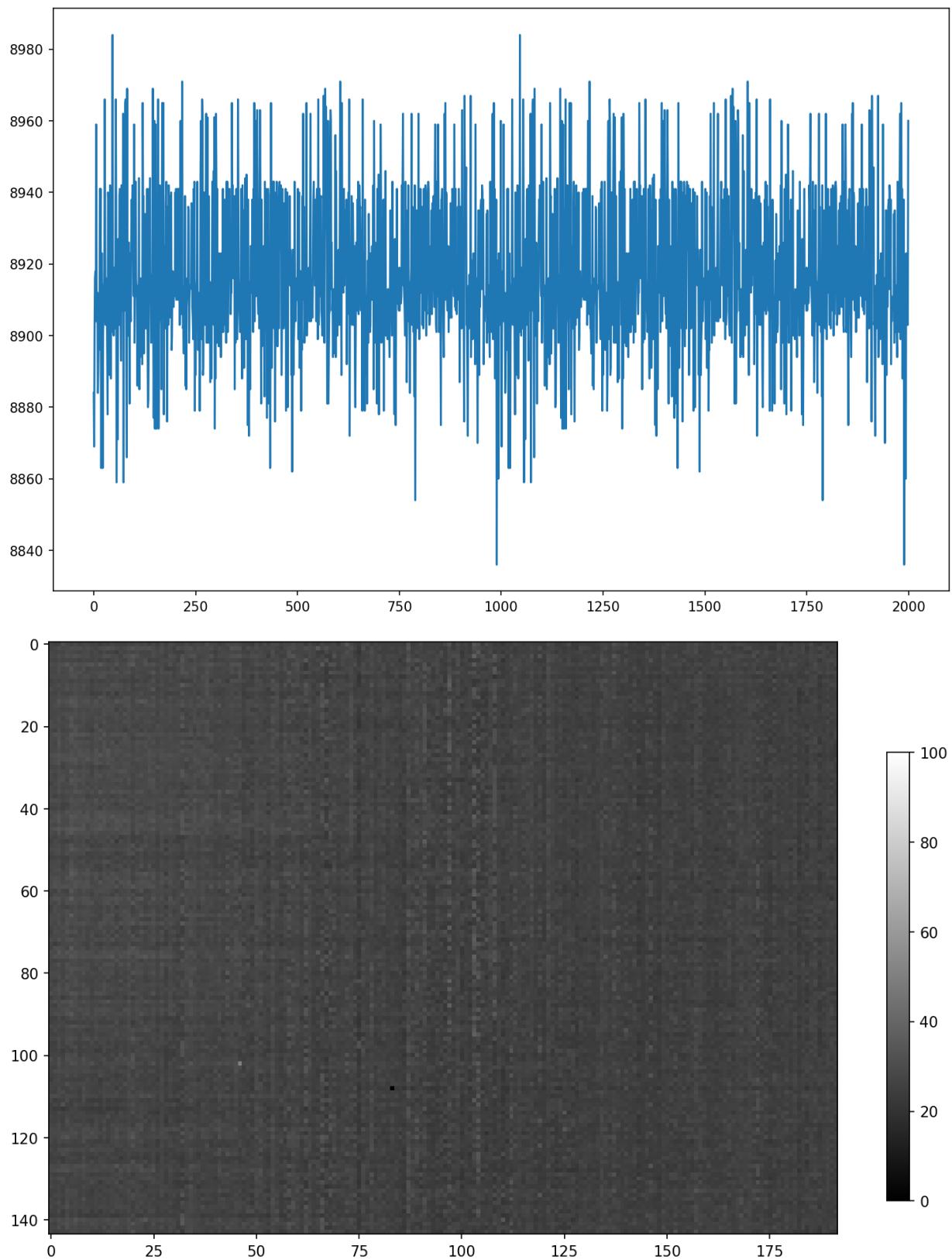
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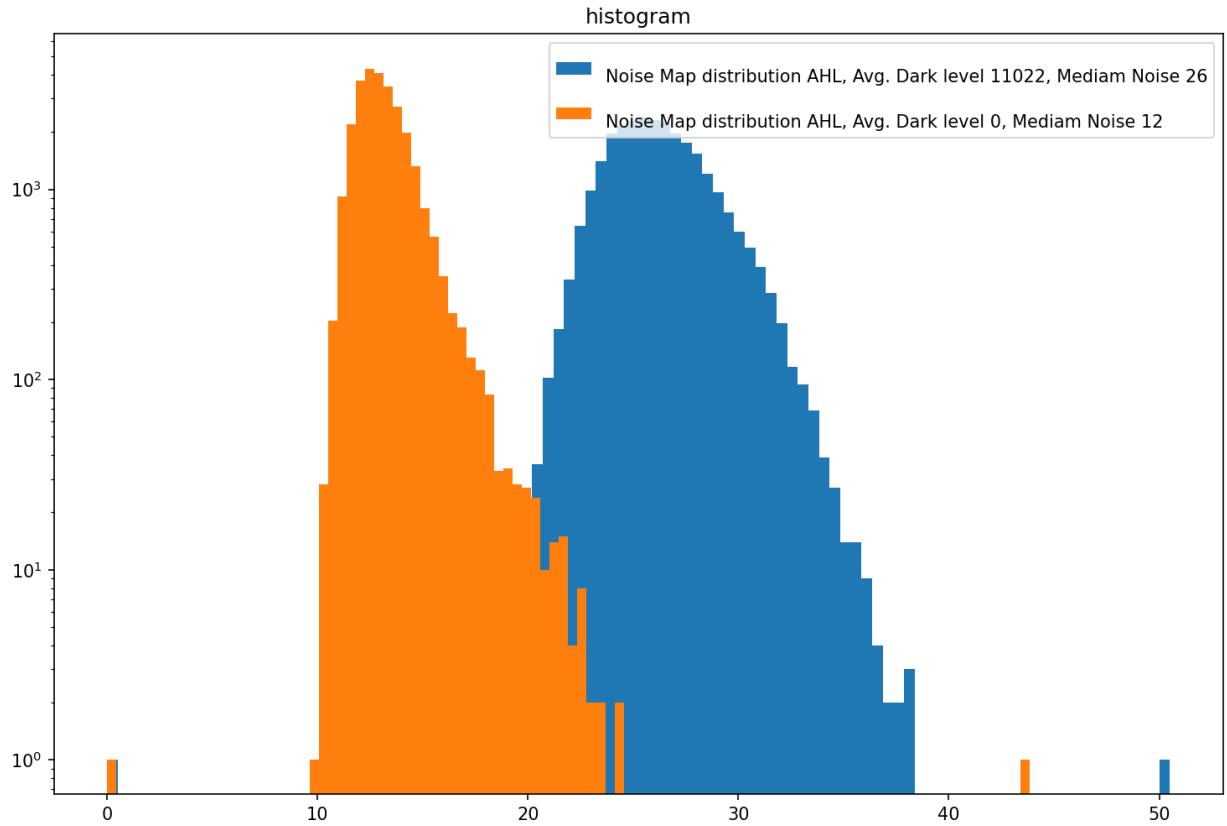
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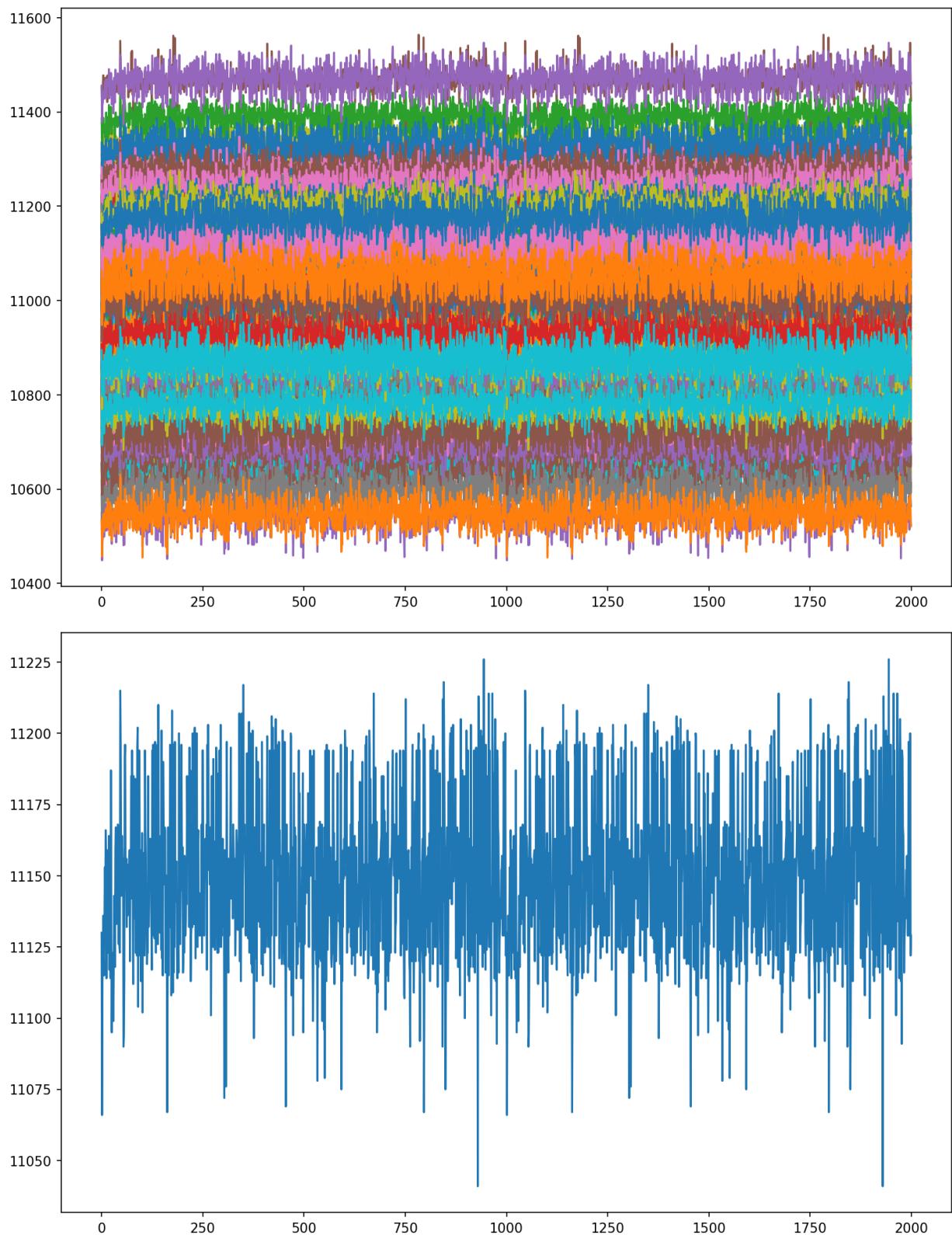
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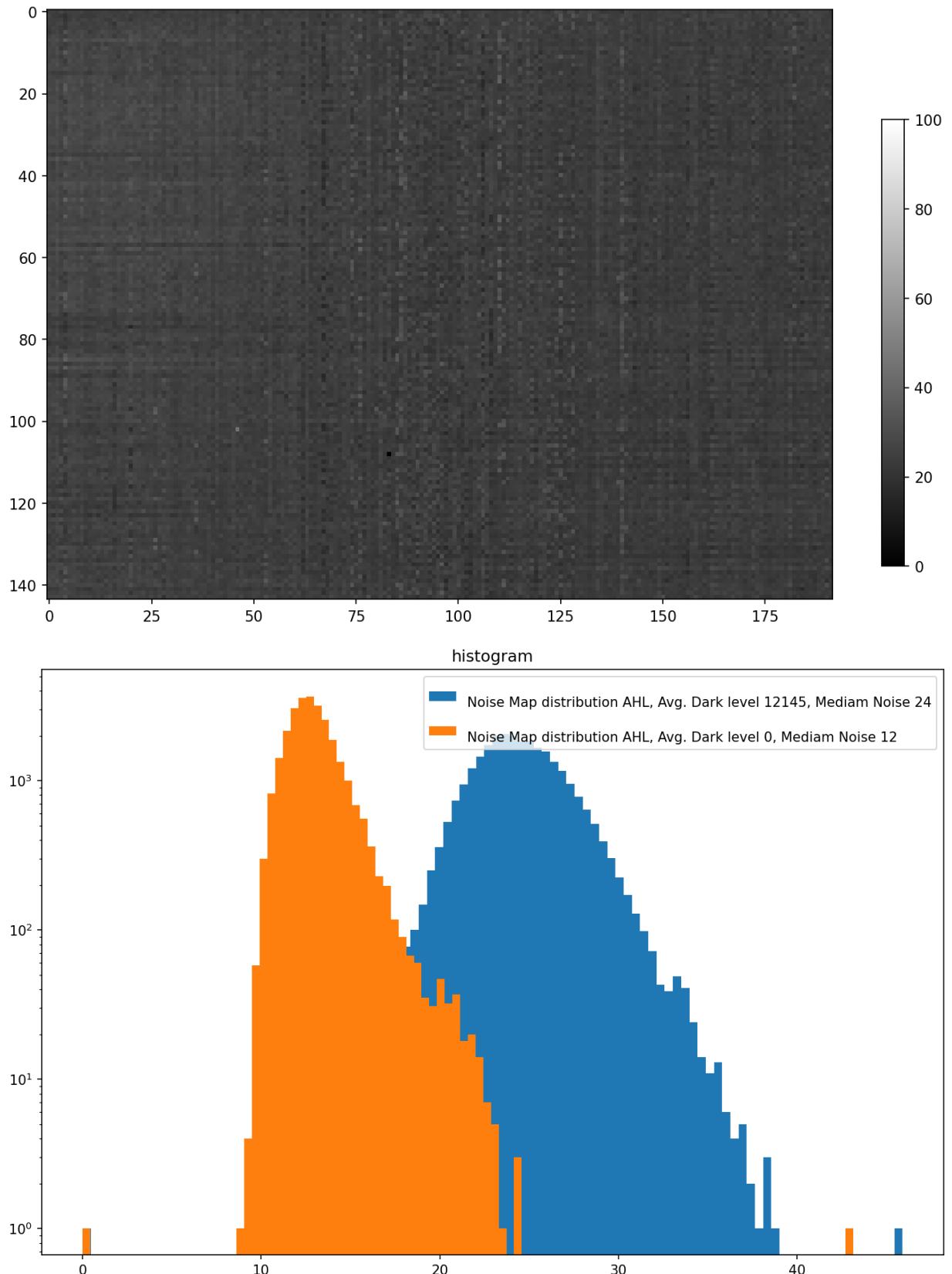
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Starting descrambling images

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set_0_ePix10KTLCLS-IITiming_ASICv3_320MHz_noise-Analyses-ASIC2_WithStrongBack-HighGain

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(2000, 144, 192)

/u2/ddoering/ASIC_V3_ASIC2_SB/ePixHR10kTLCLSIITiming_ASICV3_ASIC2_noise_320MHz
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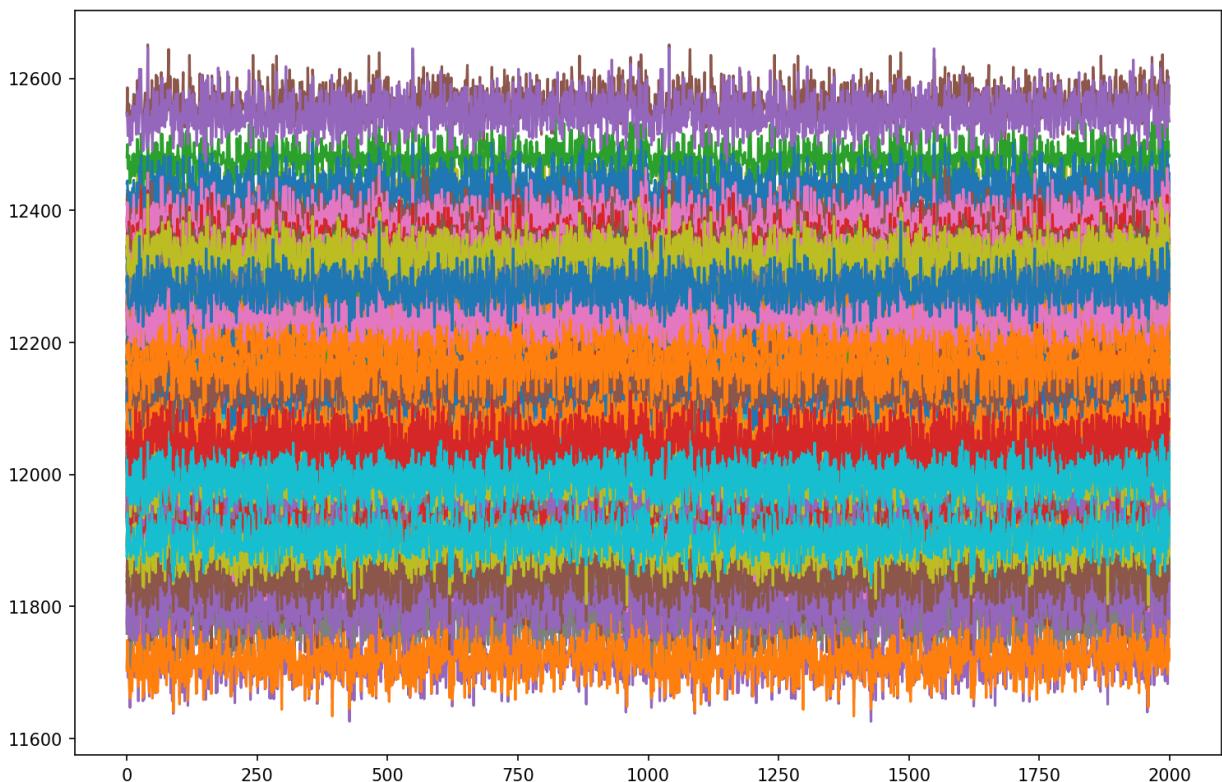
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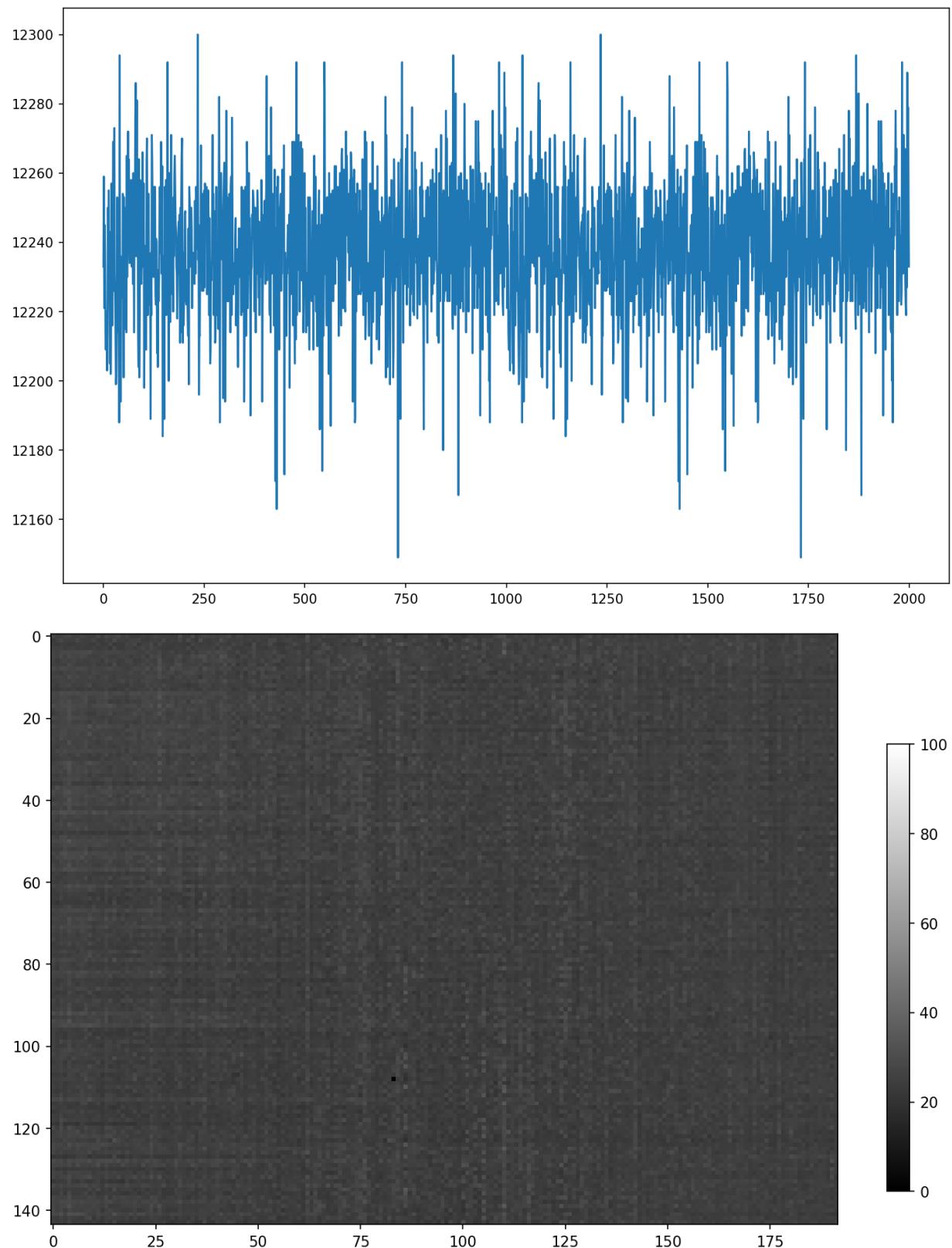
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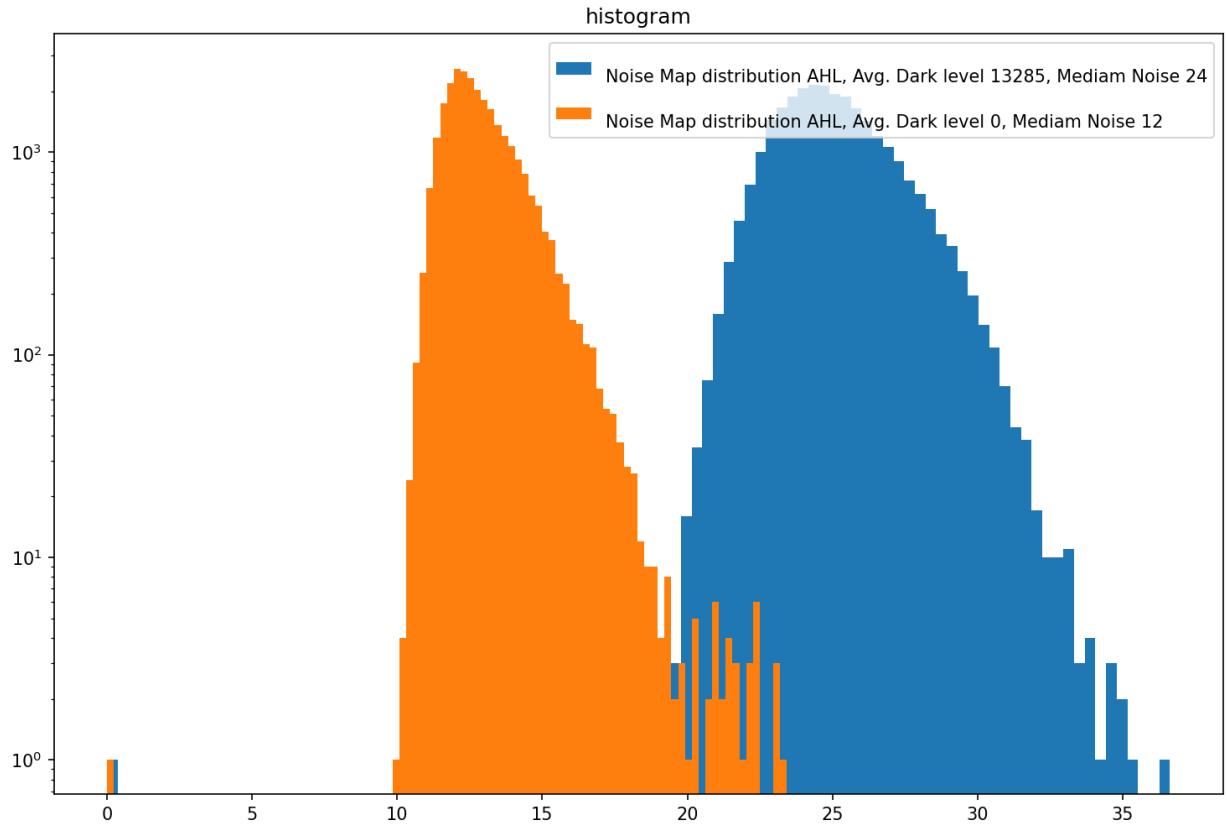
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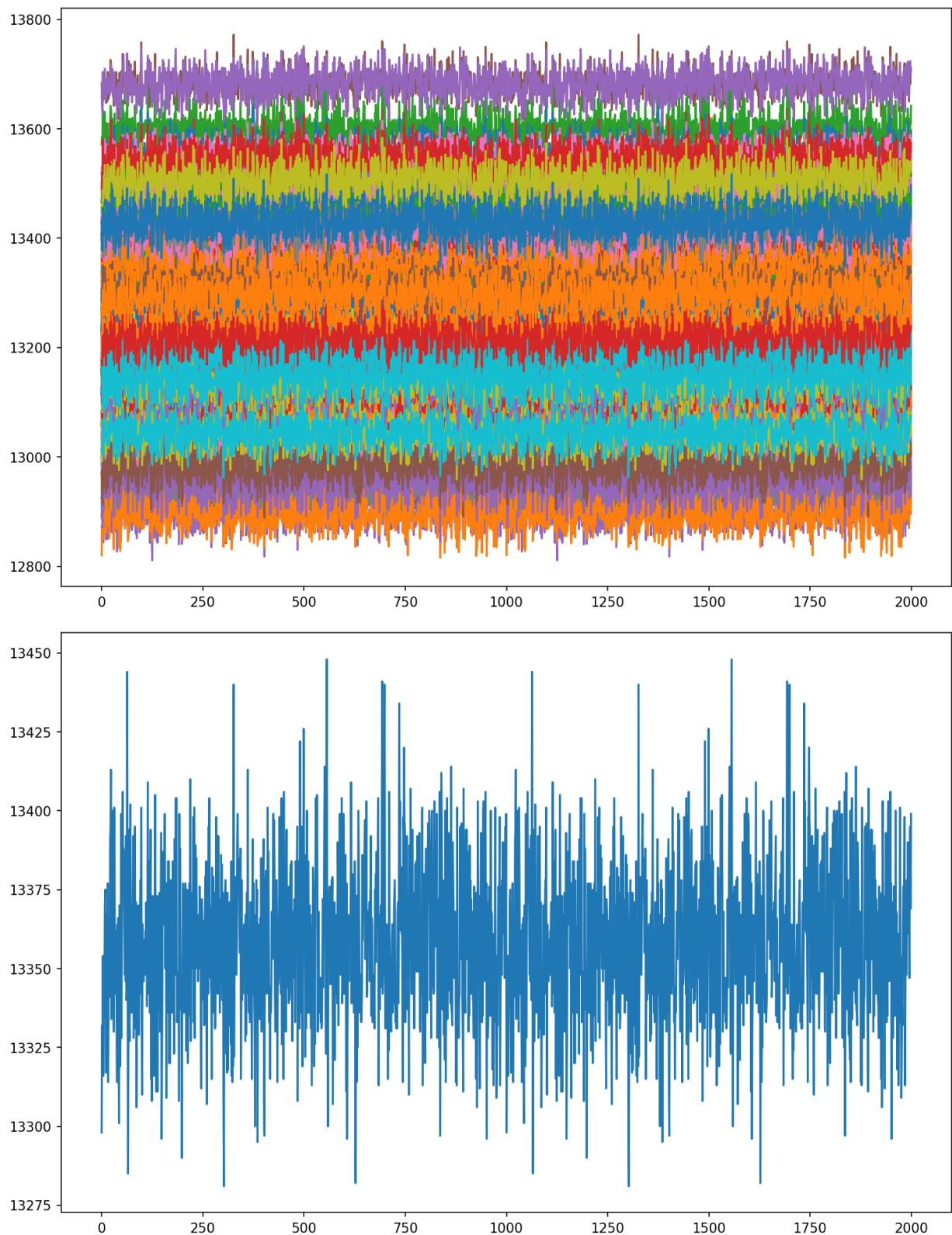
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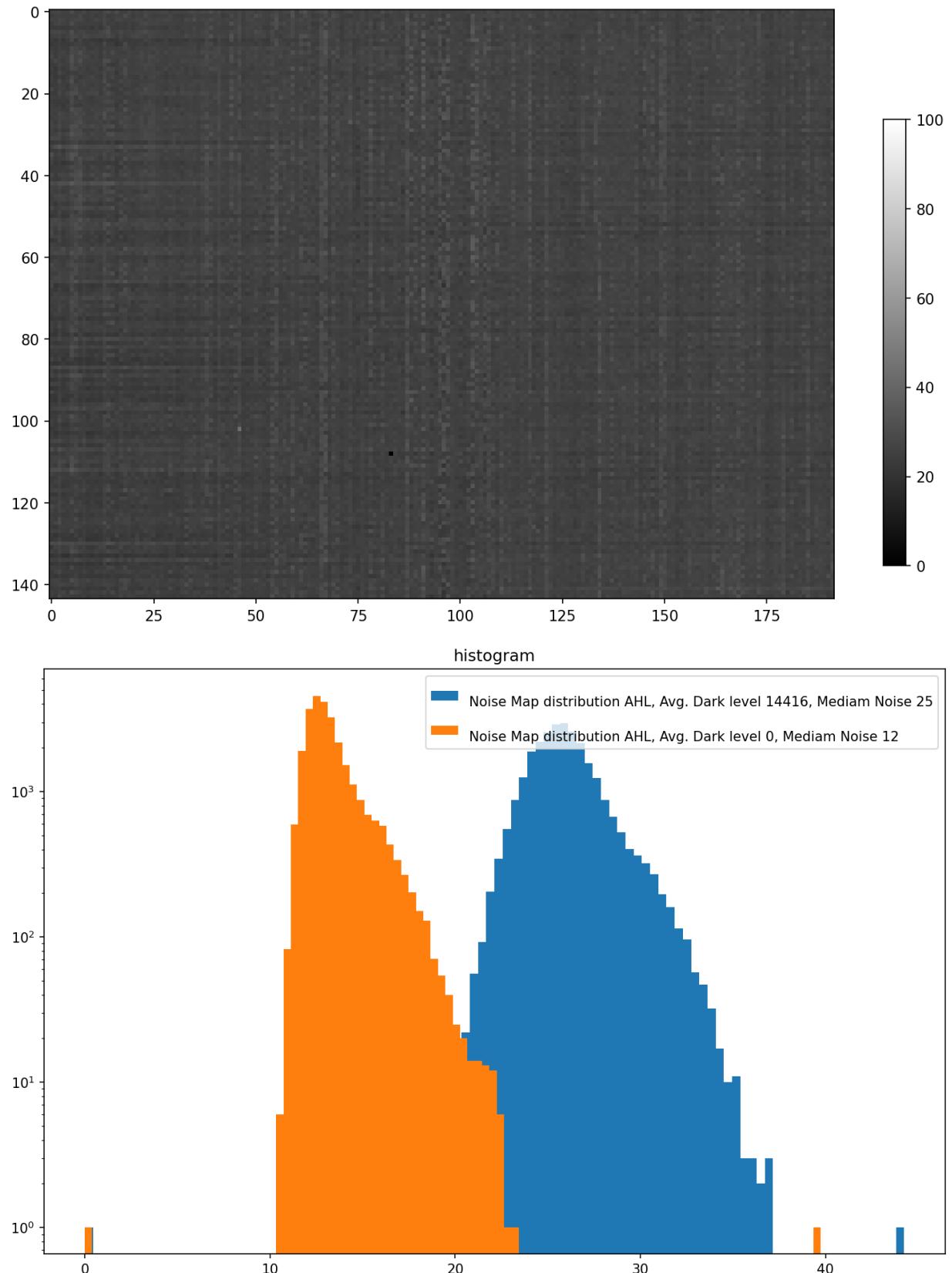
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Starting descrambling images

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set_0_ePix10KTLCLS-IITiming_ASICv3_320MHz_noise-Analyses-ASIC2_WithStrongBack-HighGain

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(2000, 144, 192)

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Starting to get data set 0

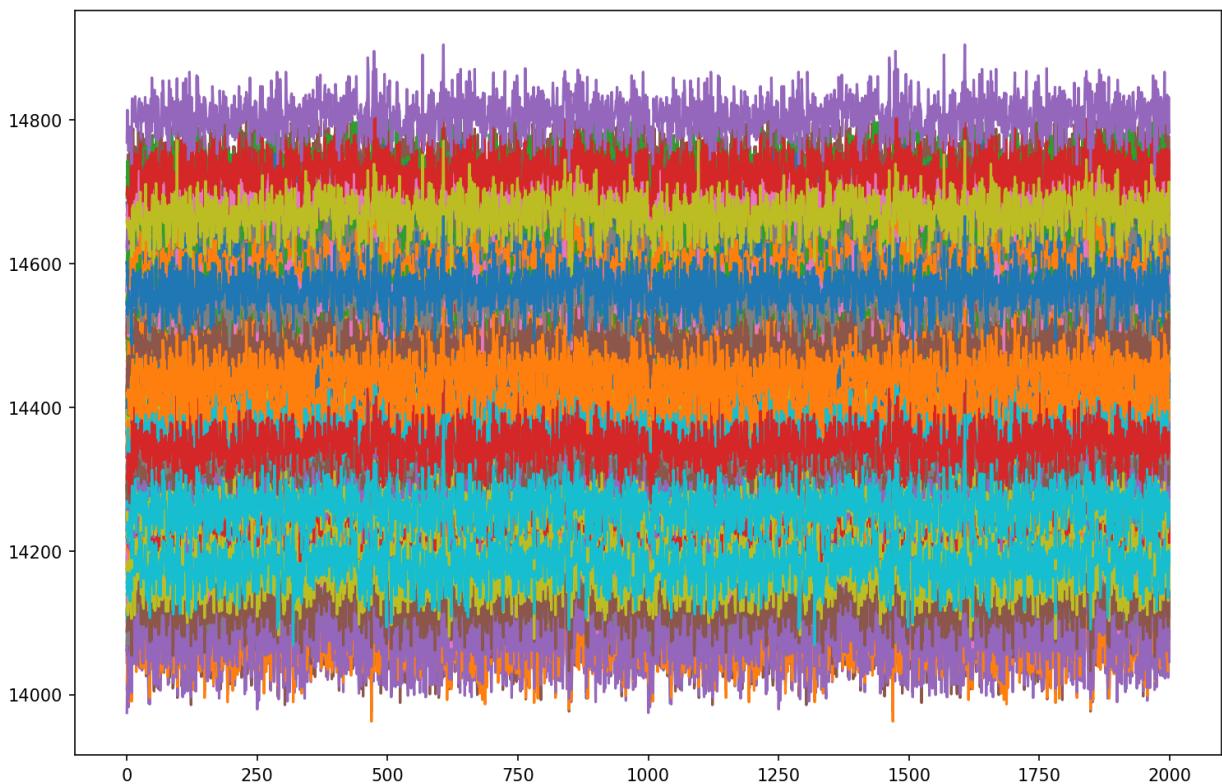
Read 1000 frames

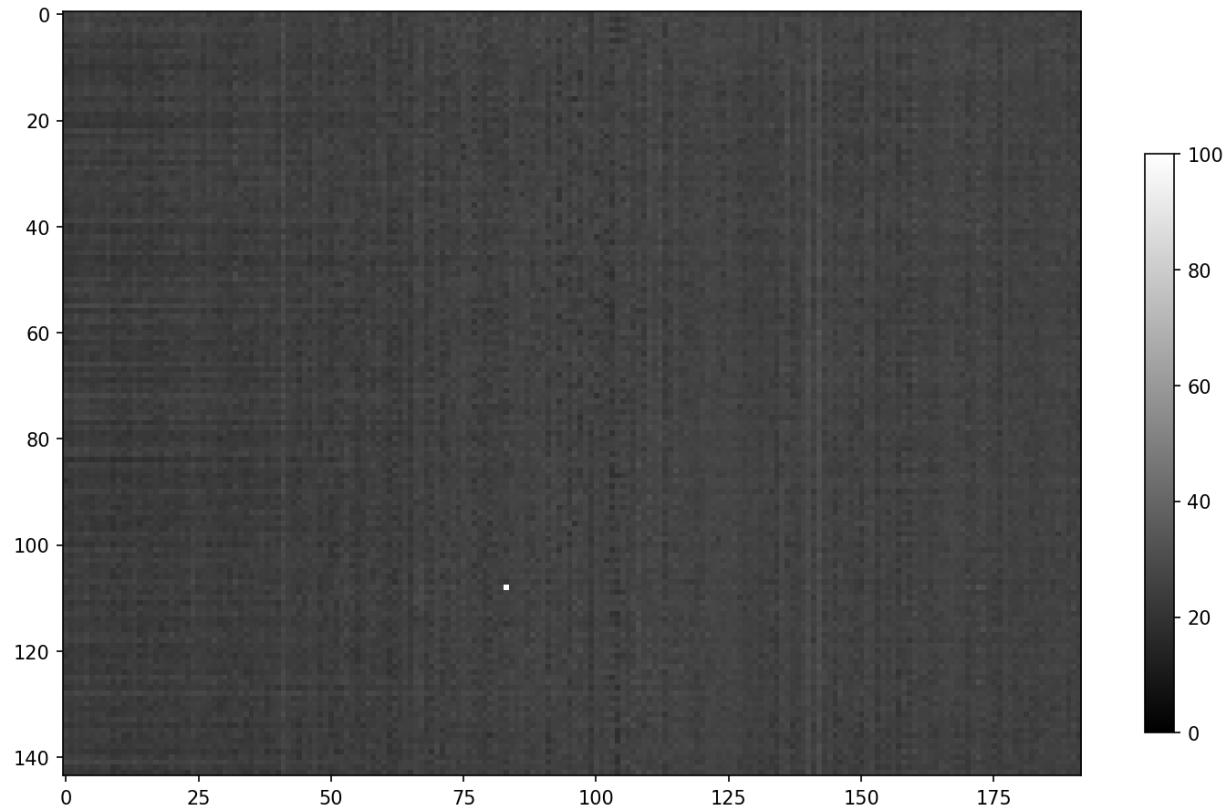
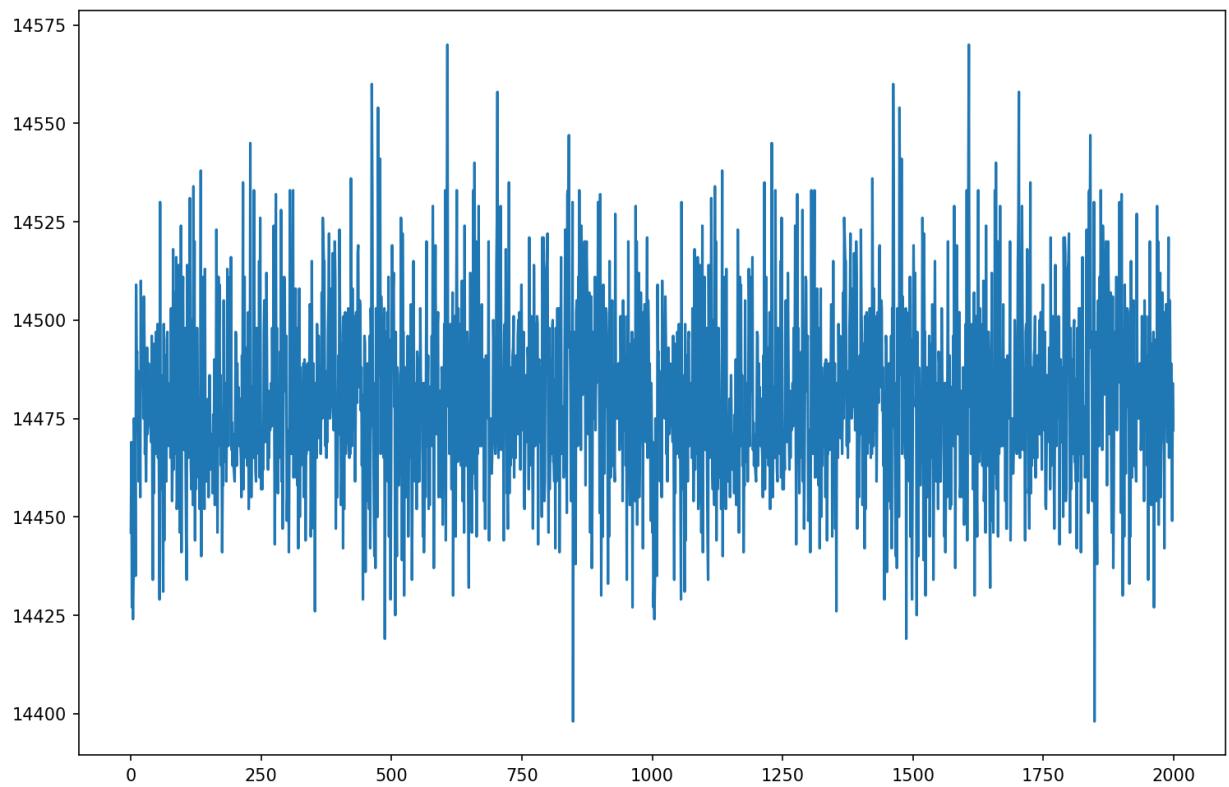
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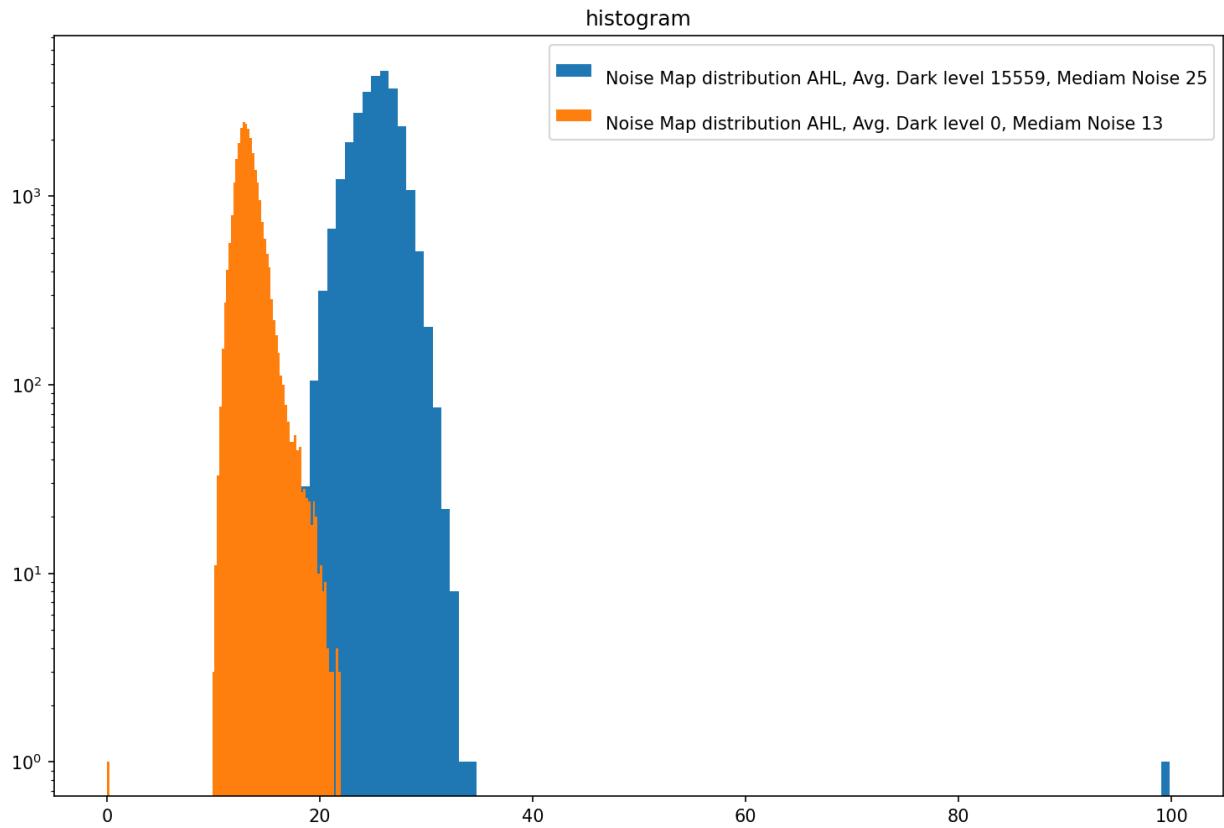
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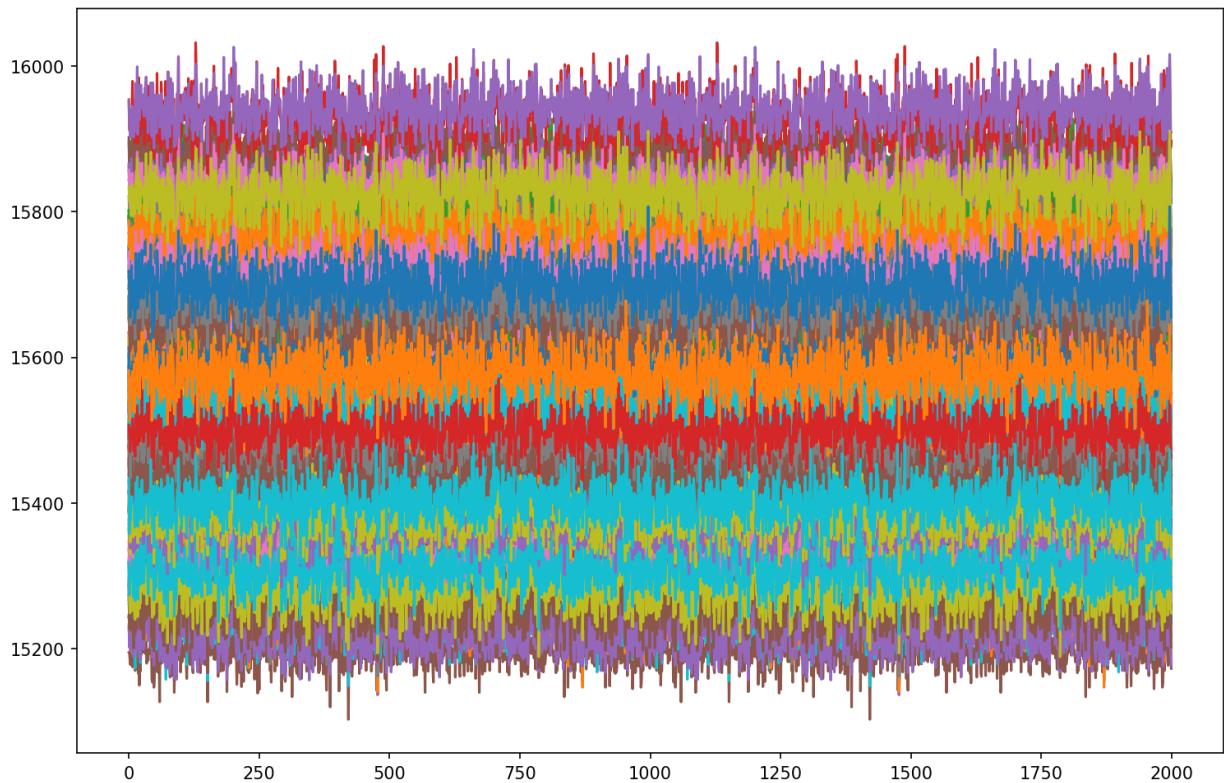
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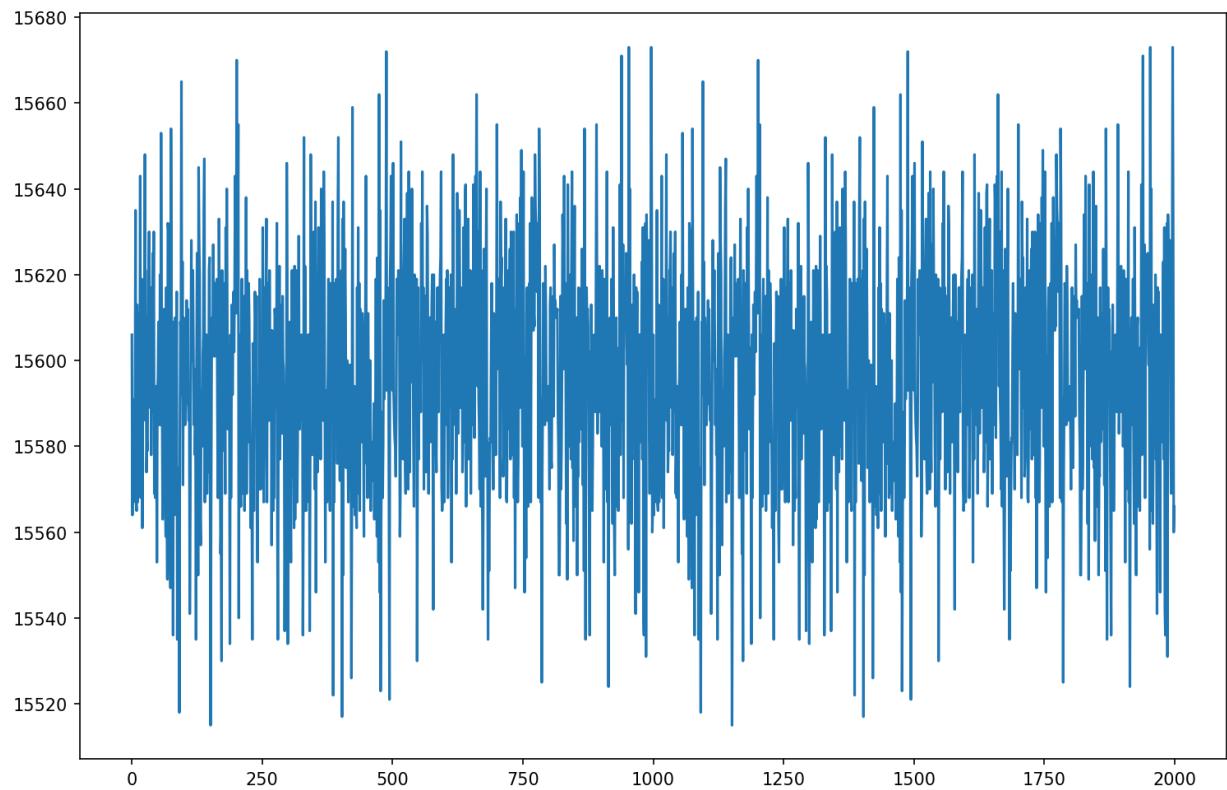






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