

# History of Problem Channels

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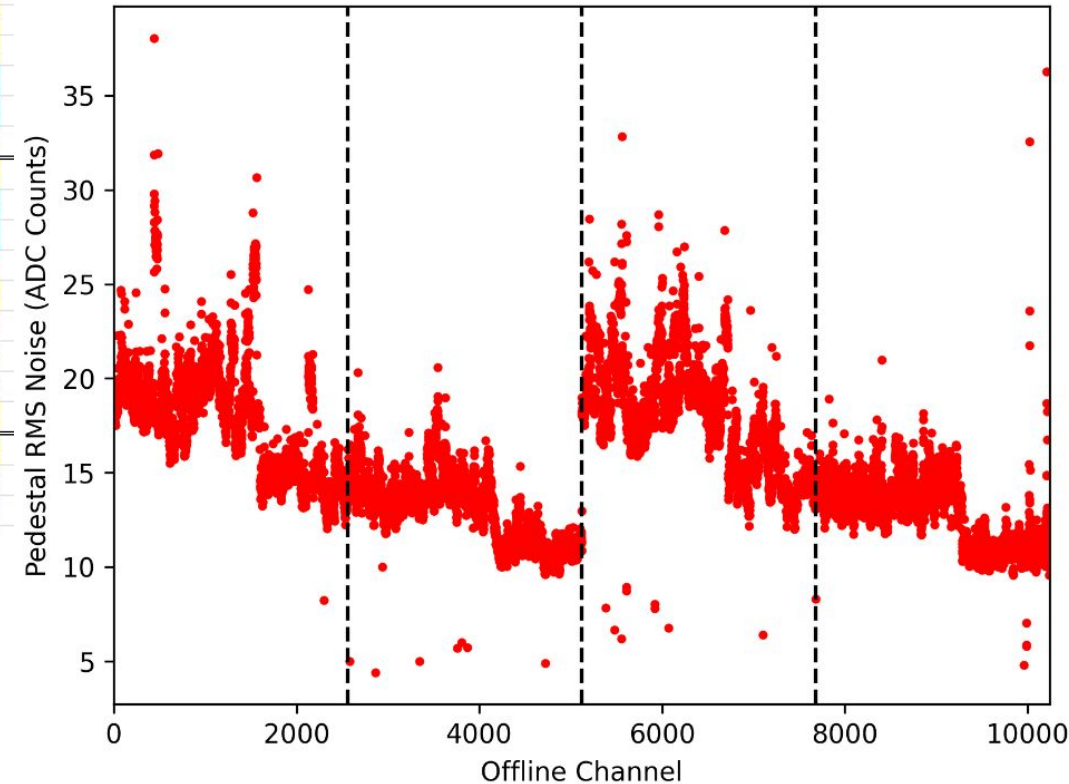
May 7th 2024

# Problem channels

- Some channels have been seeming to disconnect over time
  - Some later return to normal
- Tracked [here](#)
- Some clustering of channels going bad around the same time

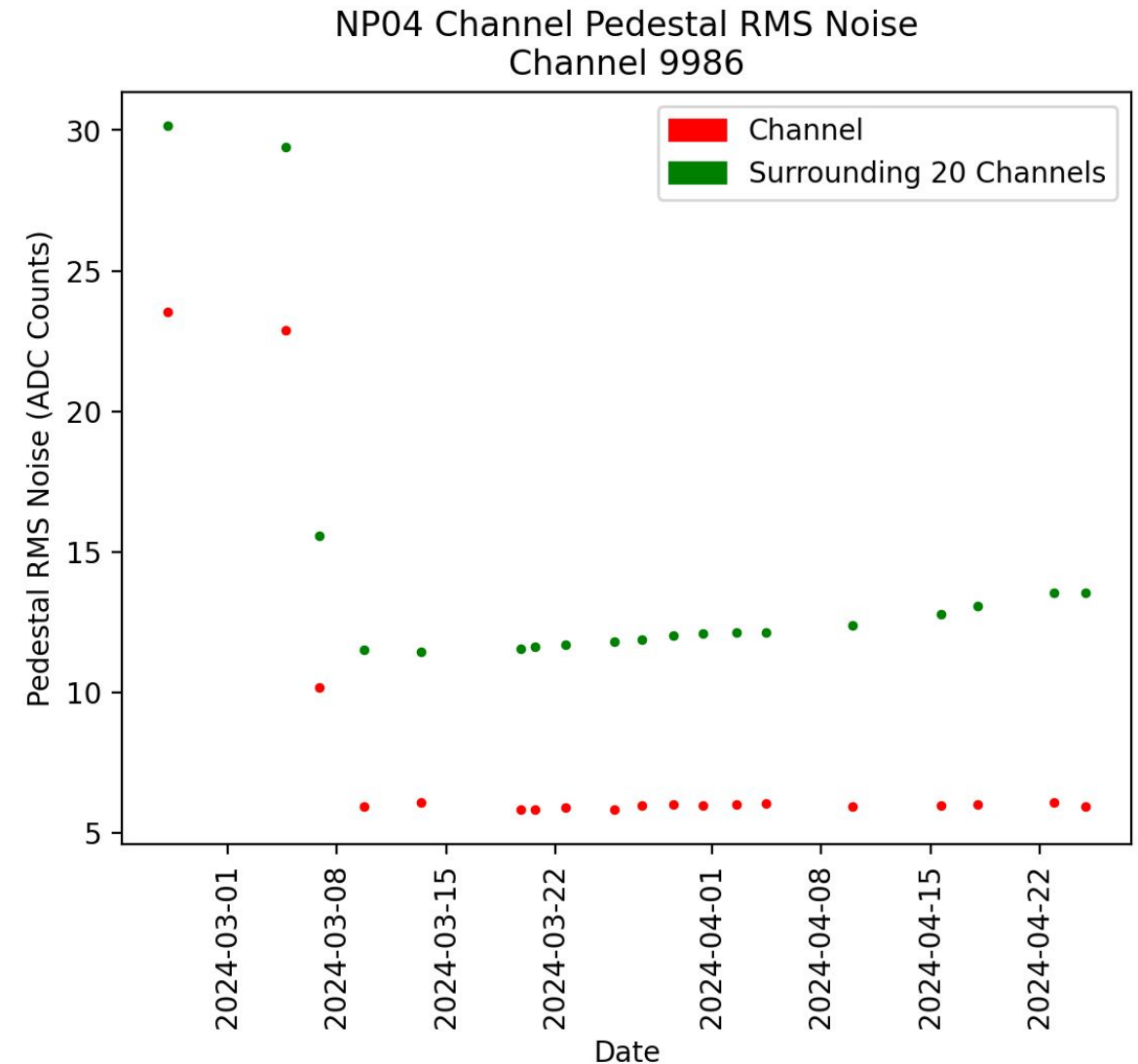
APA	NP04 Cooldown Run 22446 Open Channel Number	Coldbox Mapping	APA Layer/Side	APA Headboard-Pad	Seen in Coldbox?	Notes
1	2297	2297	X/A	6-23		
2	5354	234	U/B	5-6		Visible in run 25102
2	5379	259	U/B	4-21		
2	5472	352	U/B	2-8		Visible in run 25160
2	5474	354	U/B	2-6		Visible in run 25102
2	5478	358	U/B	2-2		Visible in run 22664
2	5554	434	U/A	10-6		Visible in run 25160
2	5556	436	U/A	10-4		Visible in run 22664
2	5558	438	U/A	10-2		Visible in run 25160
2	5607	487	U/A	8-33		5606 is high-noise too
2	5608	488	U/A	8-32		5609 is high-noise too
2	5920					
2	5921					
2	6072					
2	6787					
2	7098					
2	7099					
2	7288					
2	7679					
3	2580					
3	2587					
3	2861					
3	2940					
3	3347					
3	3758					
3	3805					
3	3866					
3	4722					
4	9956					
4	9986					
4	9987					

NP04 Channel Pedestal RMS Noise  
Run 24720 2024-04-04 10:09:03



# Bad long time ago

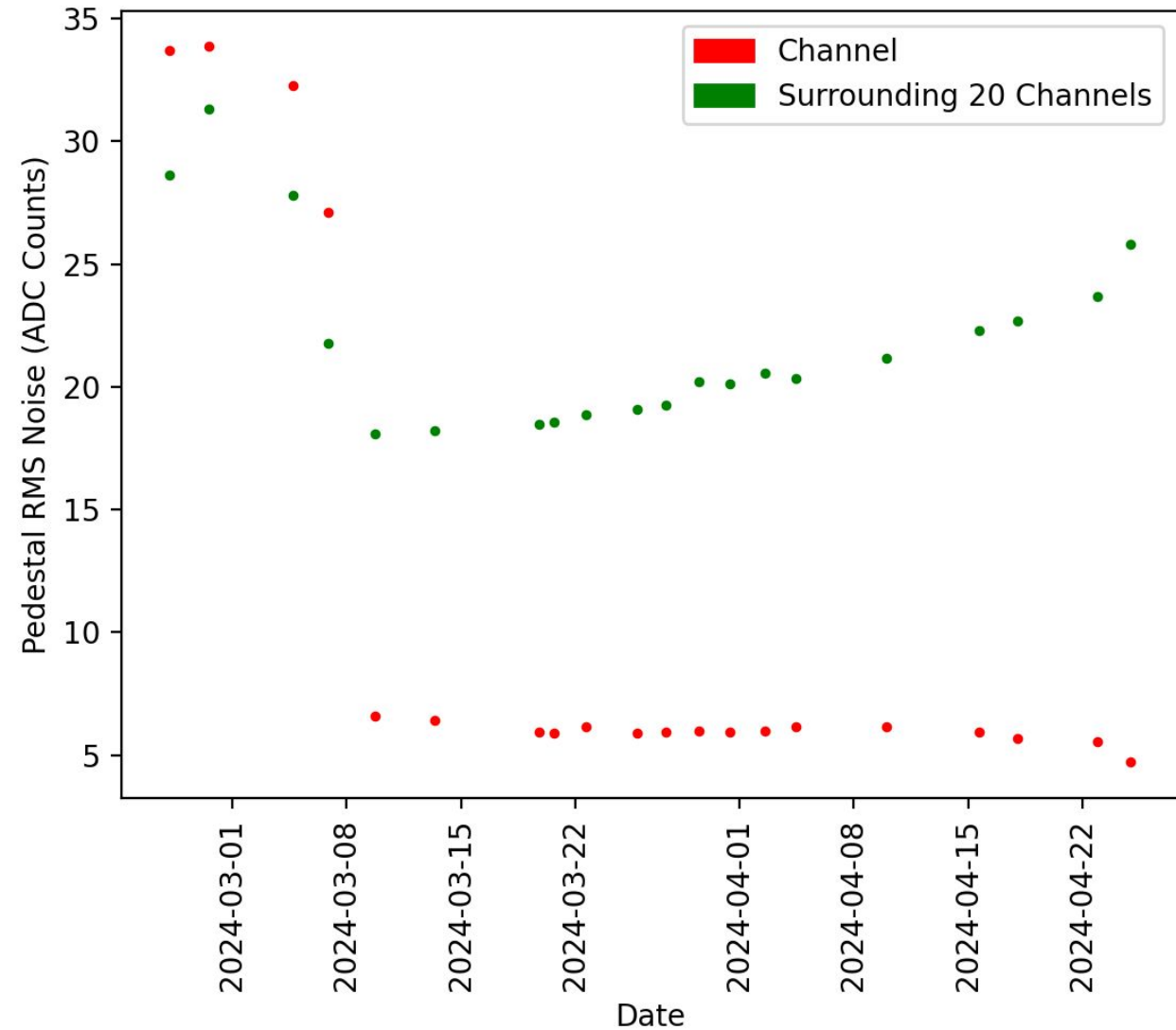
- Many were much lower noise than surrounding channels before filling started



# Bad during filling

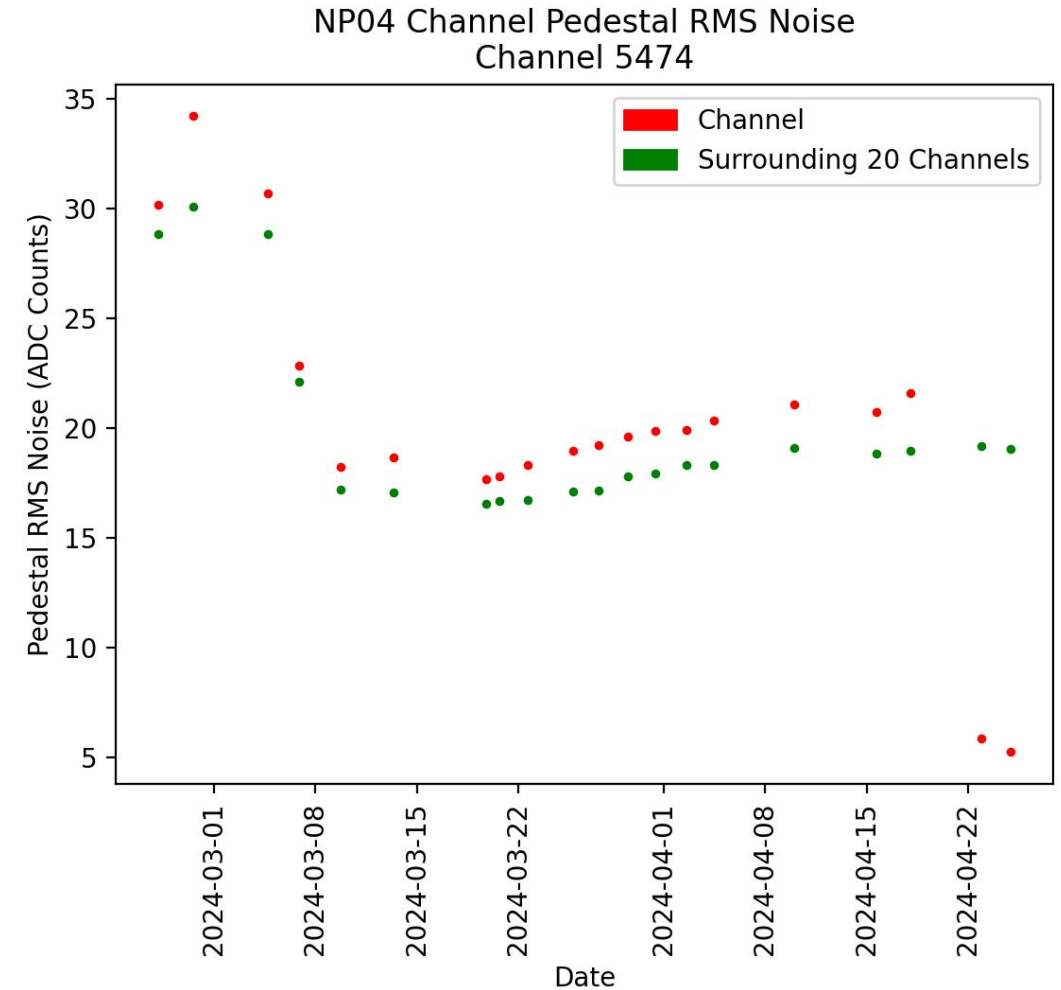
- Several channels went bad around when filling started in early March
- Almost of them disconnected during the same ~2 day gap of March 7th to March 9th
- There wasn't continuous monitoring data being taken so we can't place it more precisely

NP04 Channel Pedestal RMS Noise  
Channel 5556



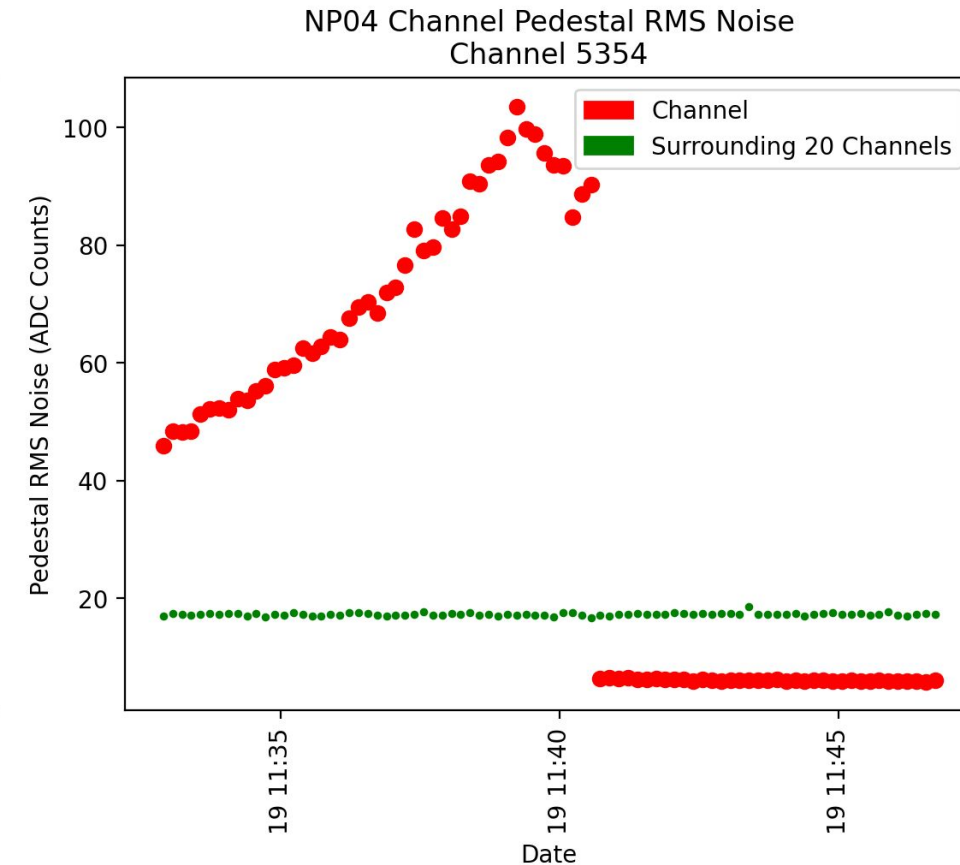
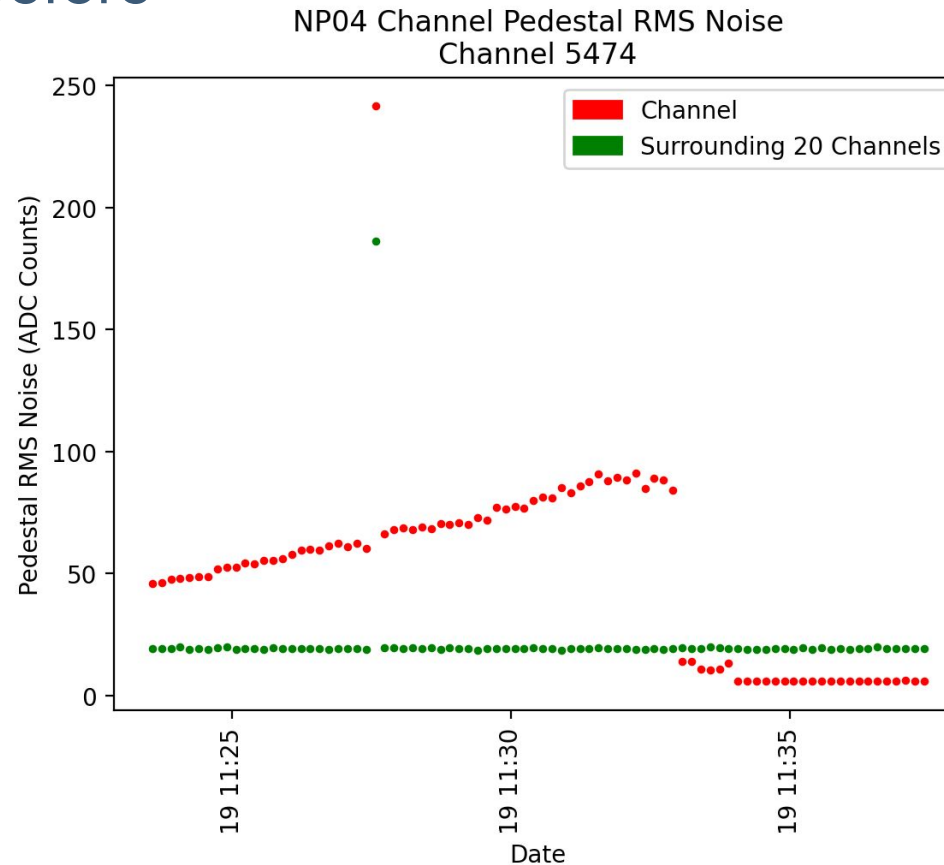
# Bad recently

- A few more channels dropped out within the last few weeks
- Possibly related to filling nearing completion
- Two disconnected on the same day, April 22nd



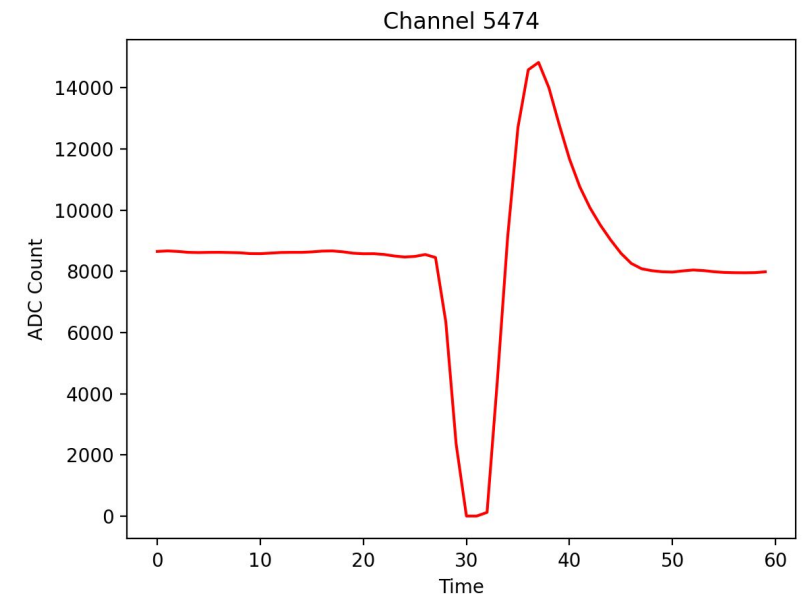
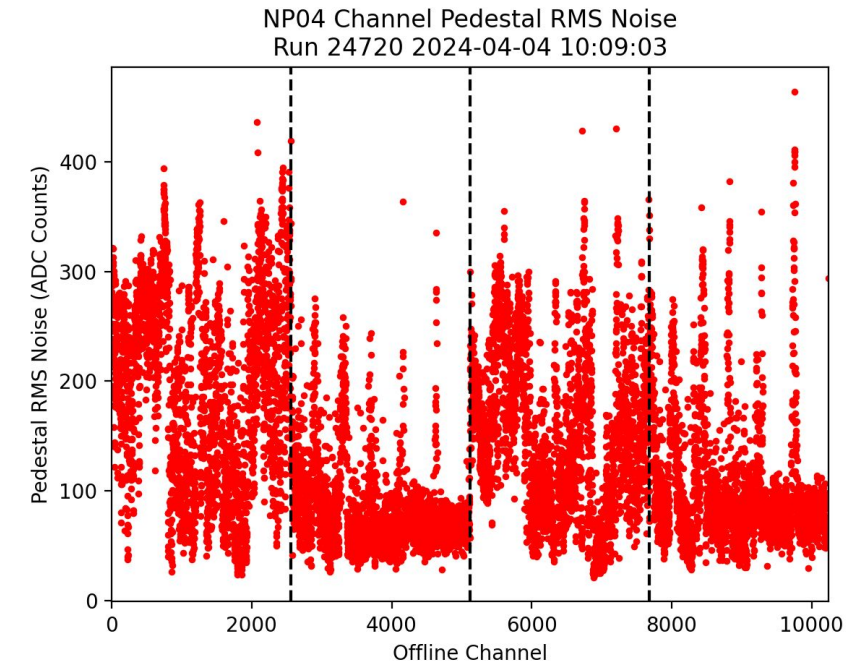
# How close were they?

- Disconnected within ~5 minutes of each other
- Weird spike before



# Noise spike before

- Possibly unrelated?
- Huge jump in noise across all channels for just one record
- Channel ADC counts show various waveforms at the same time
- Some channels look like this, others just peak in one direction, others opposite polarity



# Summary

- Channels that became low noise recently did so mostly in several clustered periods
- Some but not all have since returned to functioning normally
- Time difference for two different channels disconnecting was found to be around five minutes