Ming-fai Fong
22 Sep 2010

General Info

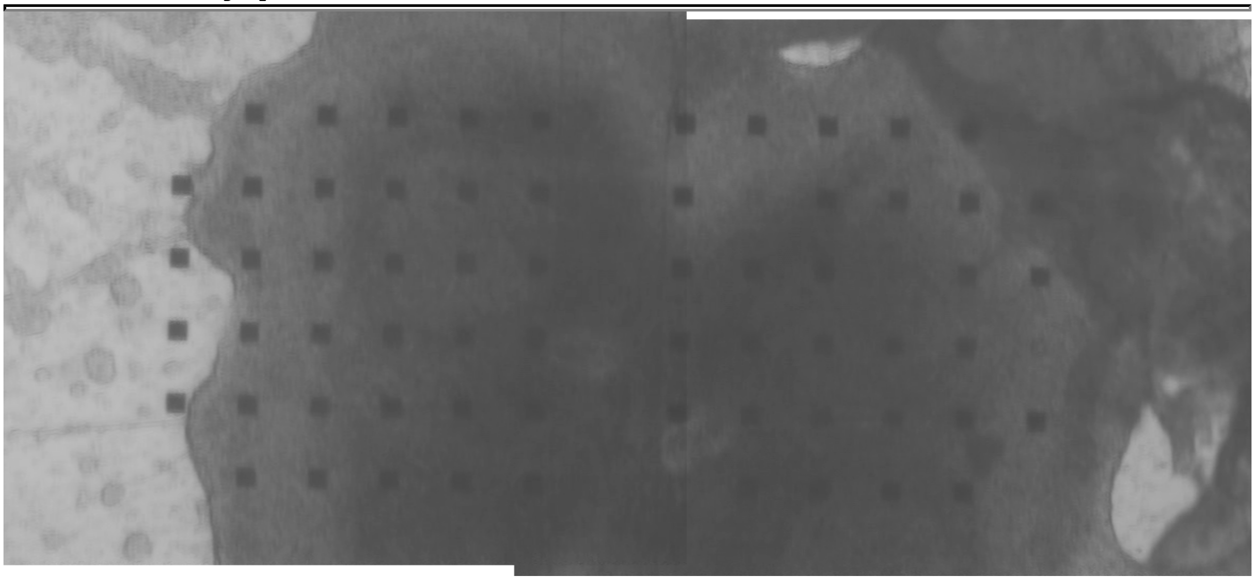
Experiment ID: ex100922_2SpOT.5
Date of Culture: 18 Aug 2010
Type of Culture: 2 Spinal Organotypic
Drug Applied: gabazine + strychnine
Date & Time Applied: 21-Sep-2010, 15:00
Date & Time of Recording: 22-Sep-2010, 16:22

Recording Settings

Recording Channels: 1,2,3,5,7,10,12,13,14,15,17,18,19,20,21,22,23,24,25,26,27,28,29,30,32,
33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63

	1	x	62	59	56	55	52	49	x	46	
4	2	0	63	60	57	54	51	48	47	45	43
6	5	3	7	61	58	53	50	40	44	42	41
9	10	12	8	18	21	26	29	39	35	37	38
11	13	15	16	19	22	25	28	31	32	34	36
	14	x	17	20	23	24	27	30	x	33	

Culture-MEA Photograph



Details

Unless otherwise noted, all recordings were 10min long and saved in the directory D:/mingfaifong/experiments/ex100922_2SpOT.5/

Real Time	Treatment	Filename	Notes
	1uM strychnine + 10uM gabazine	DATA0.SCL	channels look great!
16:30-16:40	1uM strychnine + 10uM gabazine	DATA01.SCL	bursting activity is frequent and healthy-looking
	normal extracellular solution	DATA02.SCL	two washes of 3x each, 8min apart. still bursting... difficult to tell whether inhibitory blockers aren't washed out, or it's just bursty from slosh... seems like burst amplitude might be smaller but not sure.

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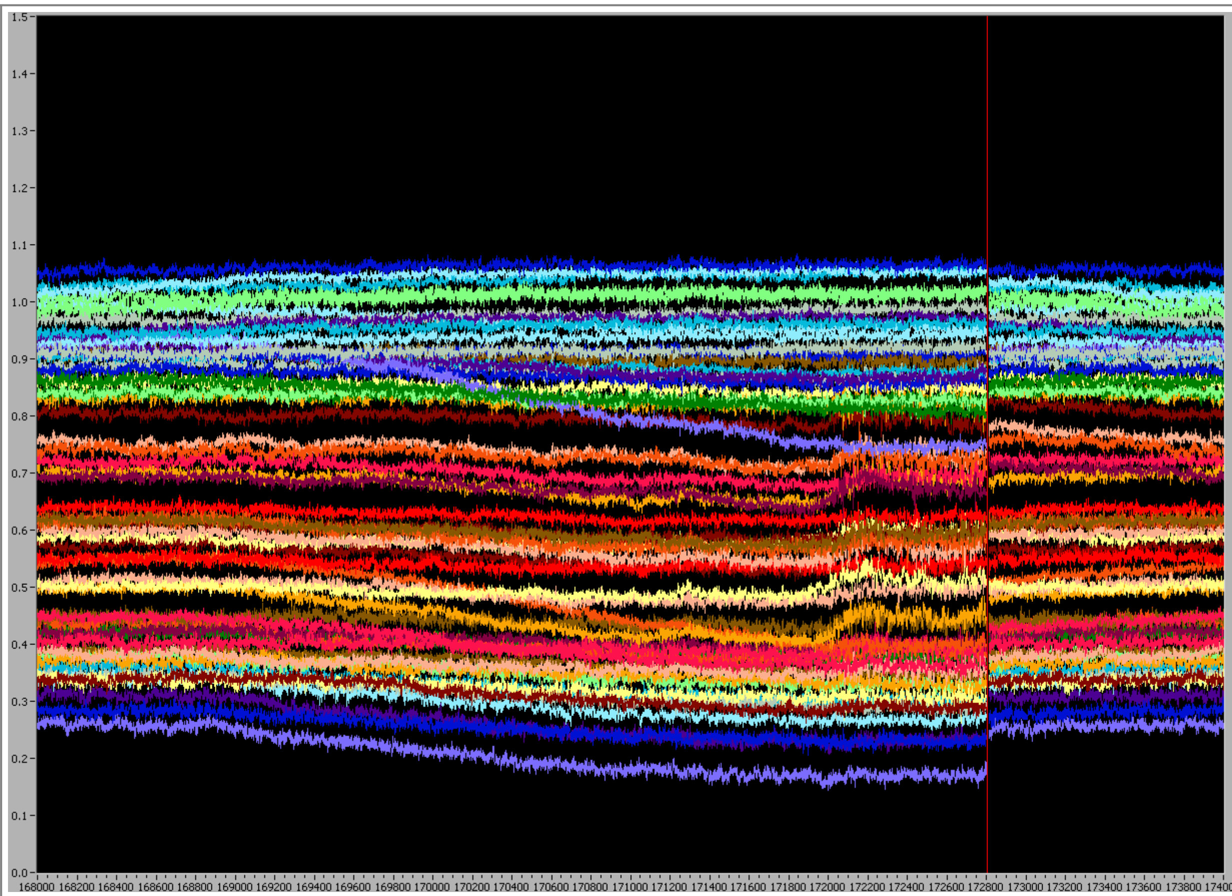
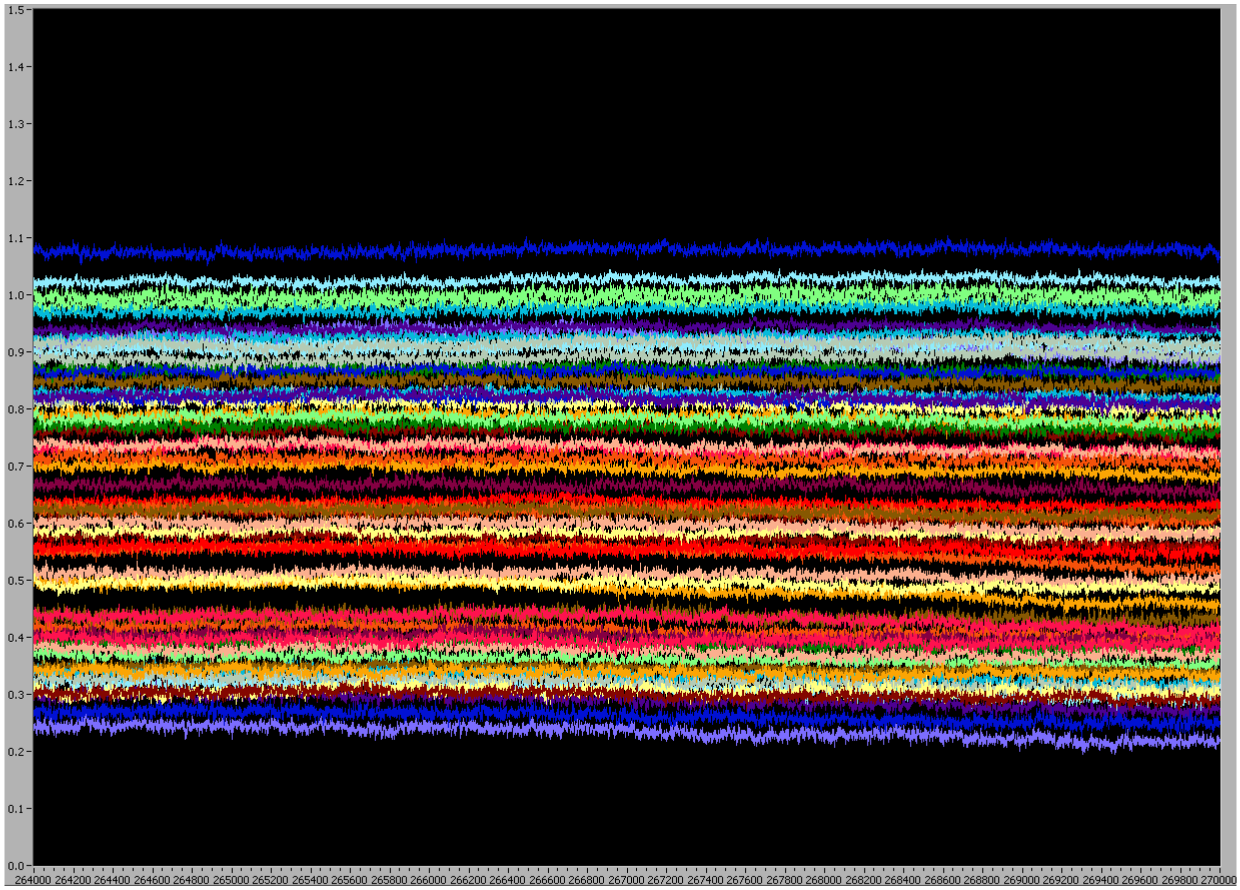
17:11-17:21	normal extracellular solution	DATA03.SCL	

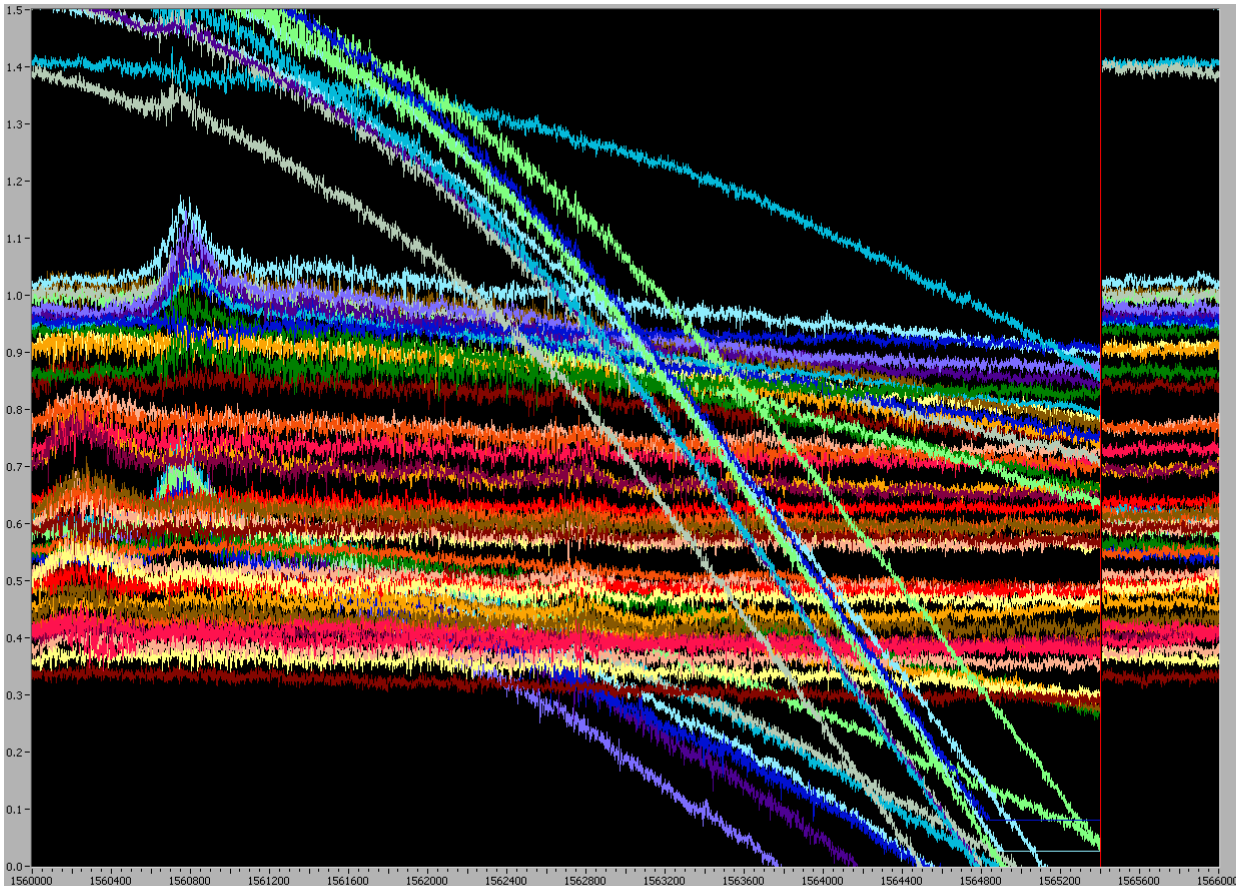
Pre-amp Problems

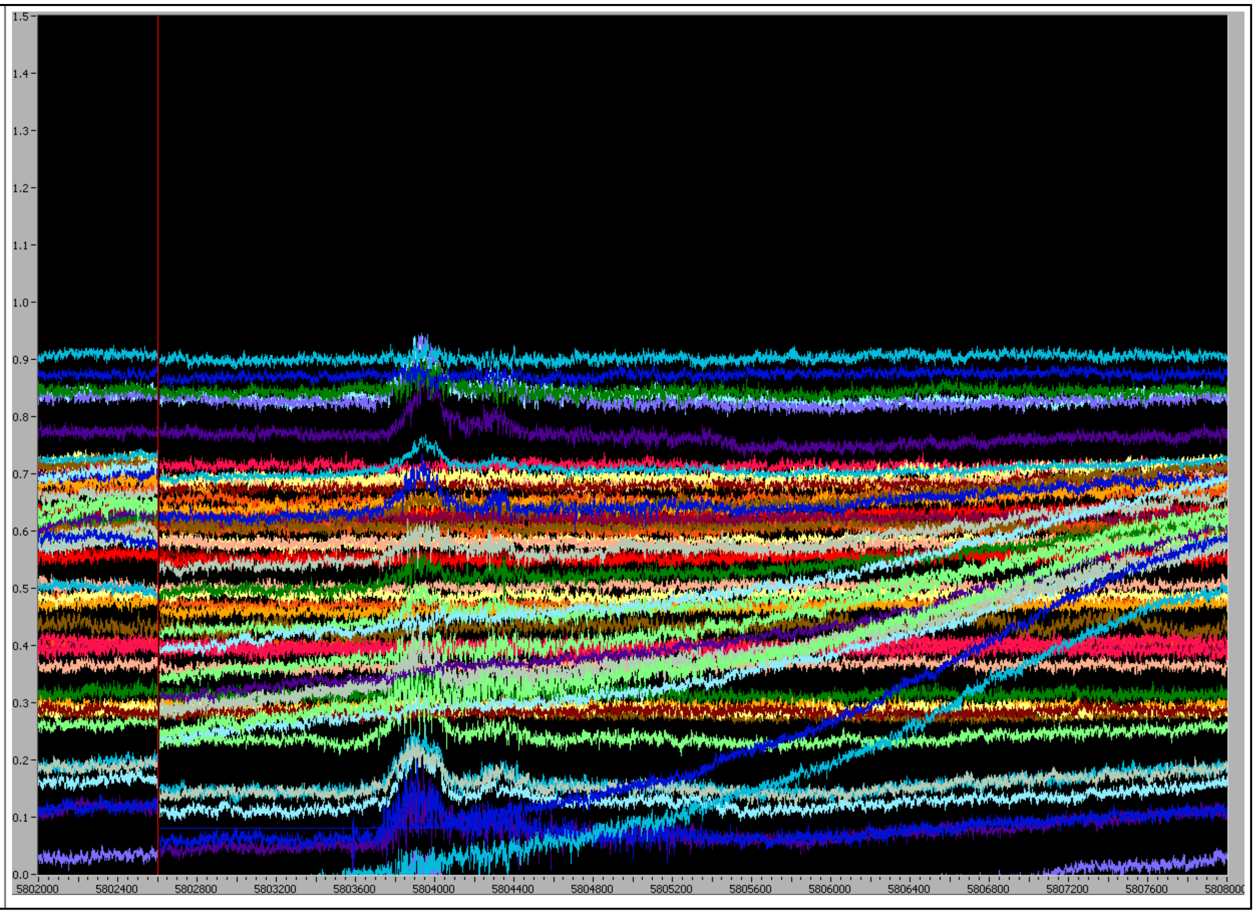
I've been having some problems with the headstage making good contact with the pre-amp, and this is (I think exacerbated by the humid environment. For this reason, some contacts look great early on, slowly drop out as the experiment progresses, and become particularly horrible when I perfuse in new solutions. In the next couple experiments I'll be trying different things and documenting performance.

Each the screenshots shows channels that were selected at the beginning of the recording. Those that are saturating out are the ones with flat waveform and low RMS.

before DATA0	

after DATA01, before wash	

after DATA01, after wash #1	

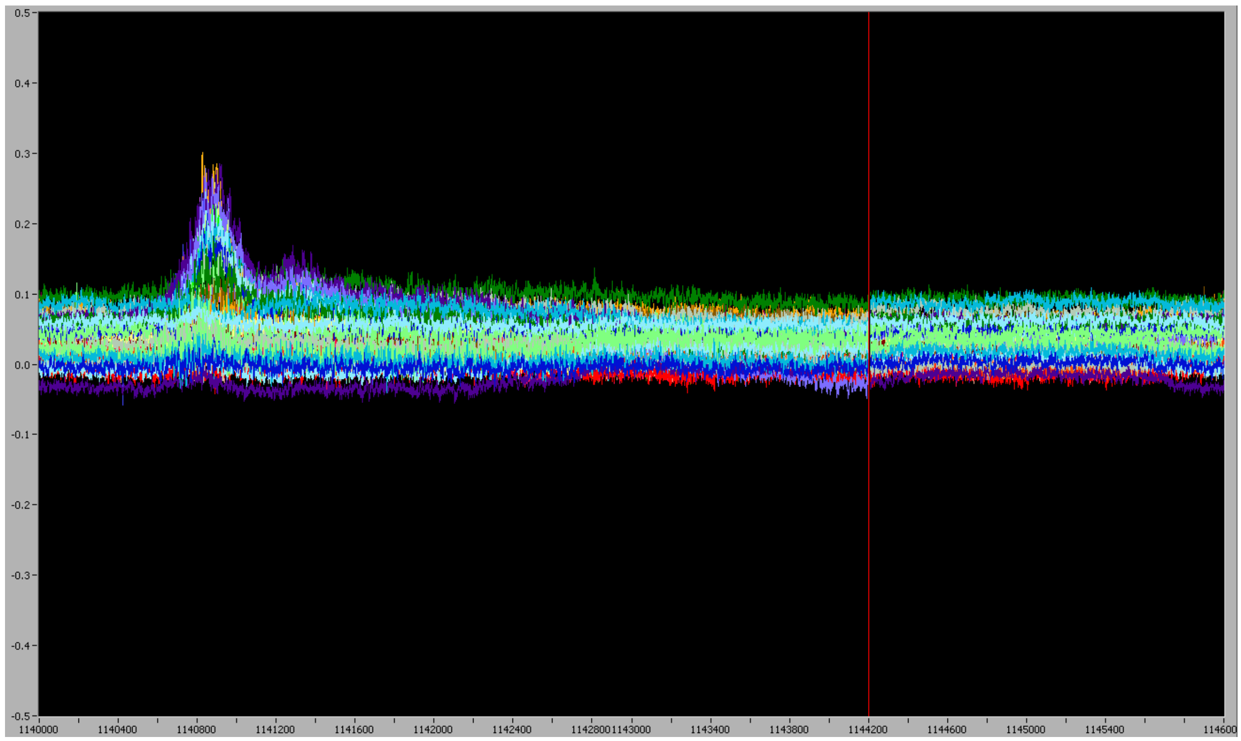
after DATA02	

The strategy that seems to work is to loosen the two bolts holding the right half of the array to the headstage about 1/2 a turn each. It is likely that the plastic spacer is slightly deformed such that the left side is not sitting as snuggly. This approach alleviates this problem (at least seems to do so). In addition, I am removing the chamber from the pre-amp before changing perfusion solutions so that I can be as gentle as possible.

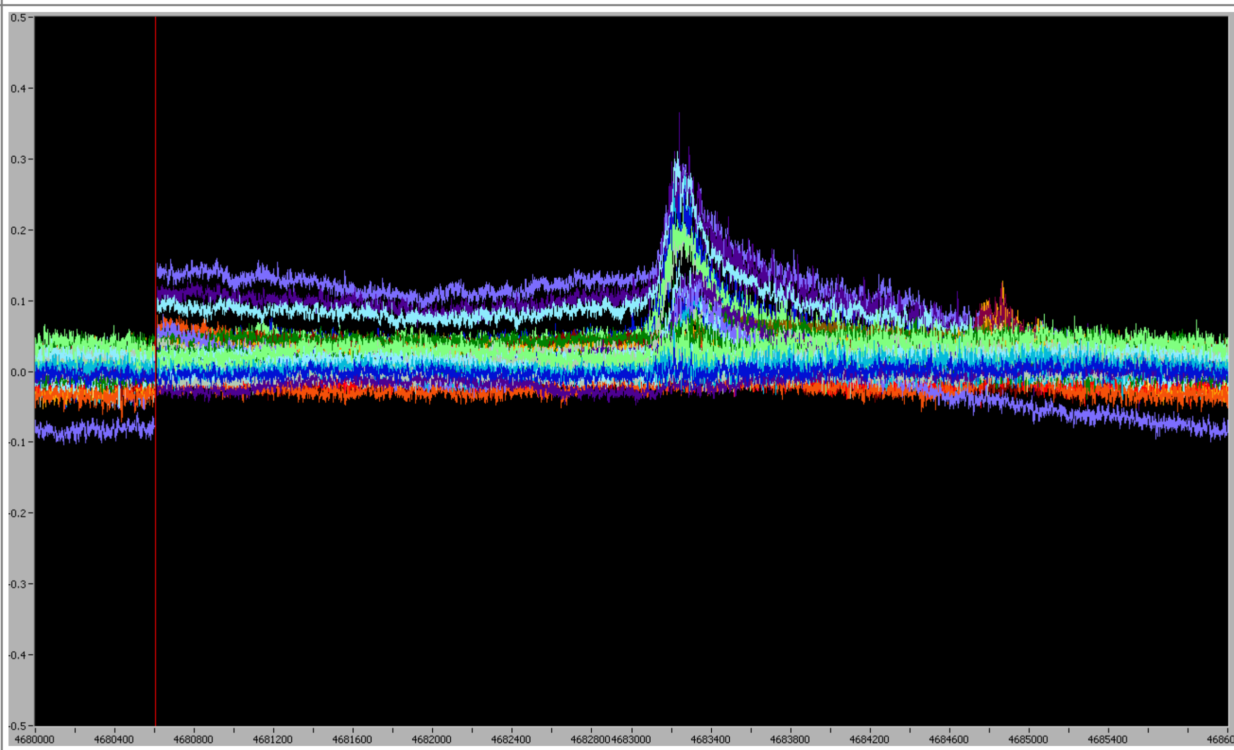
Bursting

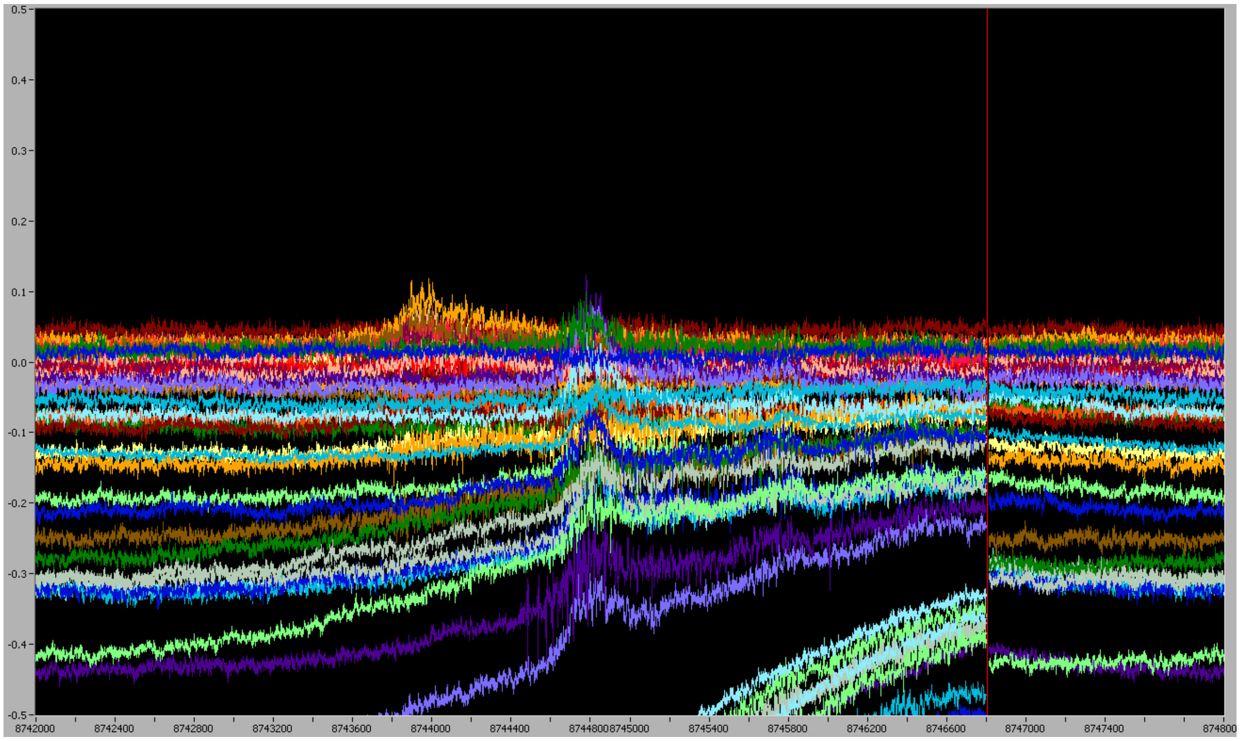
Some screenshots of bursting during select recordings.

DATA0	


0.5
0.4
0.3
0.2
0.1
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
1140000
1140400
1140800
1141200
1141600
1142000
1142400
11428001143000
1143400
1143800
1144200
1144600
1145000
1145400
114600

DATA01


0.5
0.4
0.3
0.2
0.1
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
4680000
4680400
4680800
4681200
4681600
4682000
4682400
46828004683000
4683400
4683800
4684200
4684600
4685000
4685400
468600

DATA02	

0.5
0.4
0.3
0.2
0.1
0.0
-0.1
-0.2
-0.3
-0.4
-0.5
8742000
8742400
8742800
8743200
8743600
8744000
8744400
87448008745000
8745400
8745800
8746200
8746600
8747000
8747400
874800