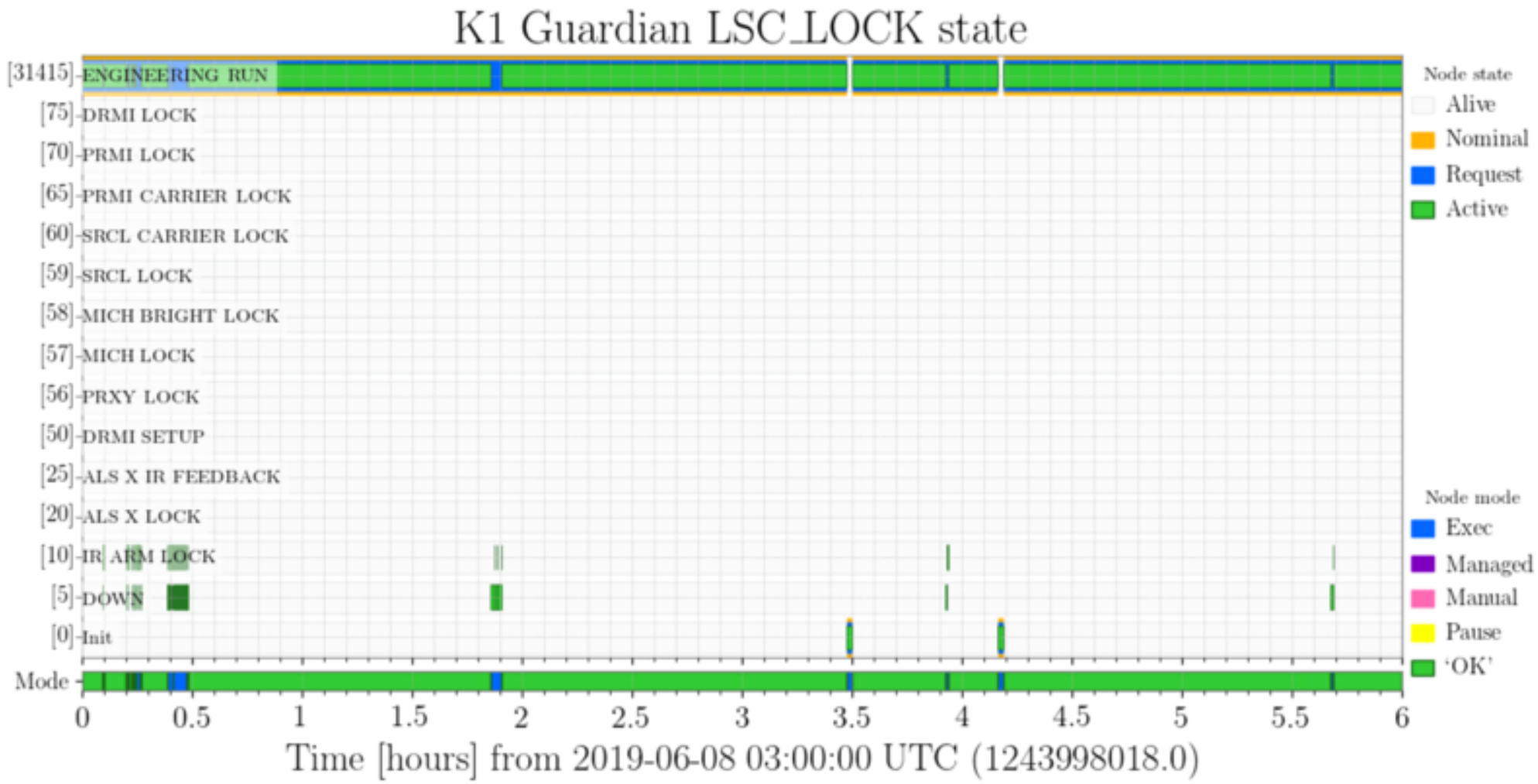
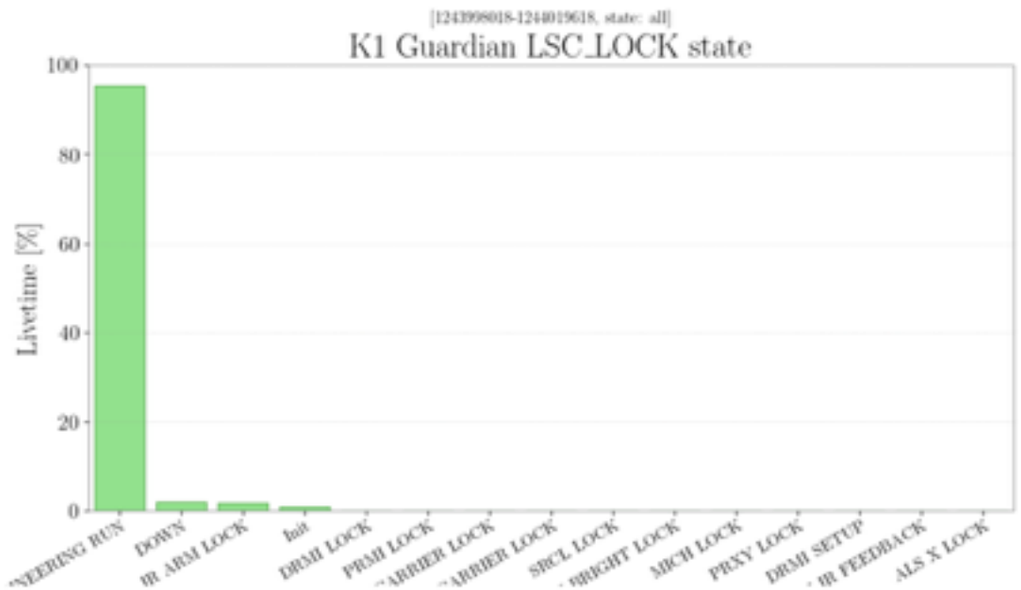
Time series figures at the 1st engineering run

Just generated the time series figures…
2019/06/11 T.Yokozawa

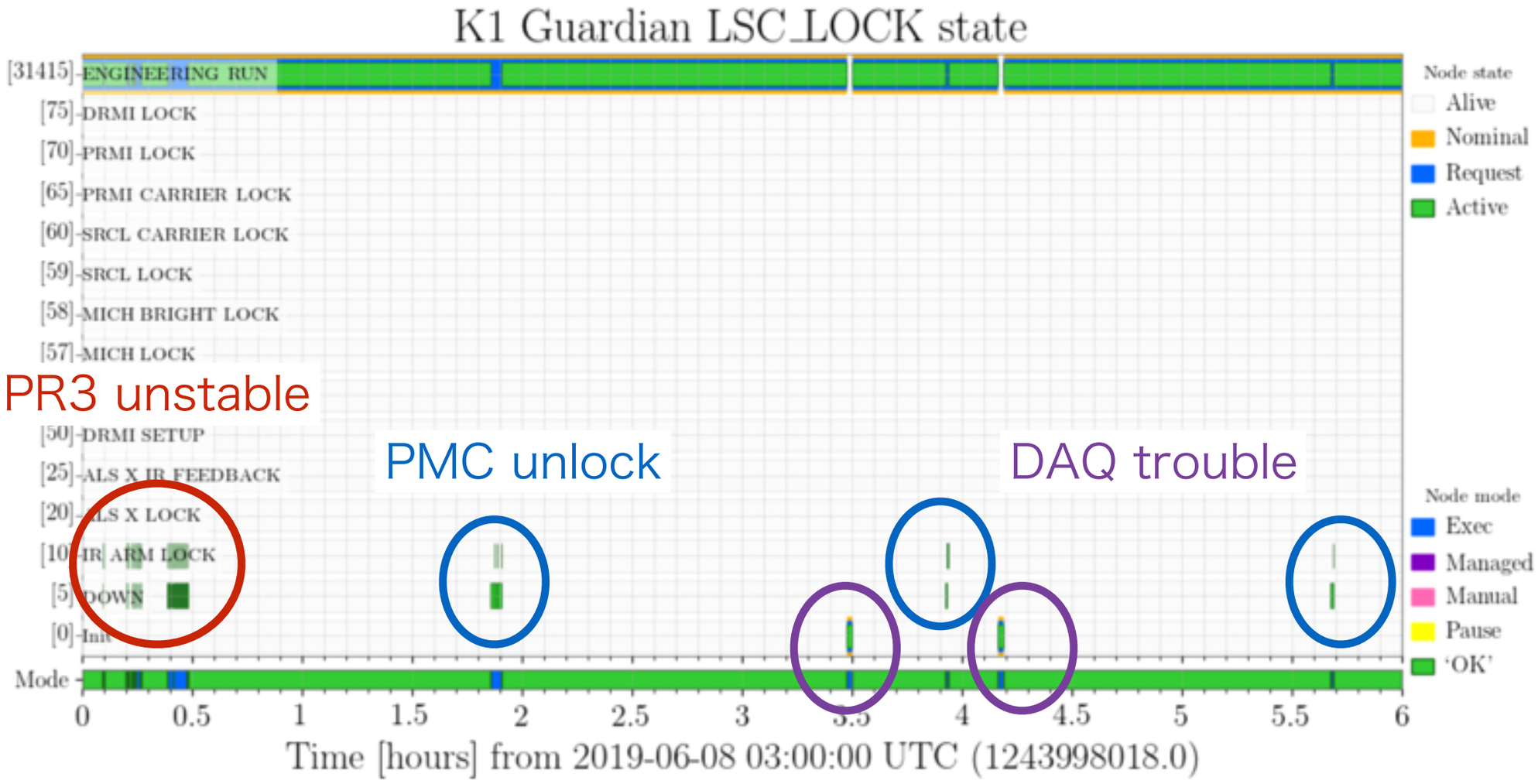
Lock status


K1 Guardian LSC_LOCK state
[31415] ENGINEERING RUN
[75] DRMI LOCK
[70] PRMI LOCK
[65] PRMI CARRIER LOCK
[60] SRCL CARRIER LOCK
[59] SRCL LOCK
[58] MICH BRIGHT LOCK
[57] MICH LOCK
[56] PRXY LOCK
[50] DRMI SETUP
[25] ALS X IR FEEDBACK
[20] ALS X LOCK
[10] IR ARM LOCK
[5] DOWN
[0] Init
Mode
0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5 5.5 6
Time [hours] from 2019-06-08 03:00:00 UTC (1243998018.0)
Node state
Alive
Nominal
Request
Active
Node mode
Exec
Managed
Manual
Pause
'OK'

K1 Guardian LSC_LOCK state
[1243998018-1244019618, state: all]
ENGINEERING RUN [95.5%]
DOWN [2.0%]
IR ARM LOCK [1.7%]
Init [0.9%]


[1243998018-1244019618, state: all]
K1 Guardian LSC_LOCK state
Livetime [%]
100
80
60
40
20
0
DOWN
IR ARM LOCK
Init
DRMI LOCK
PRMI LOCK
SRCL LOCK
MICH LOCK
PRXY LOCK
DRMI SETUP
ALS X LOCK

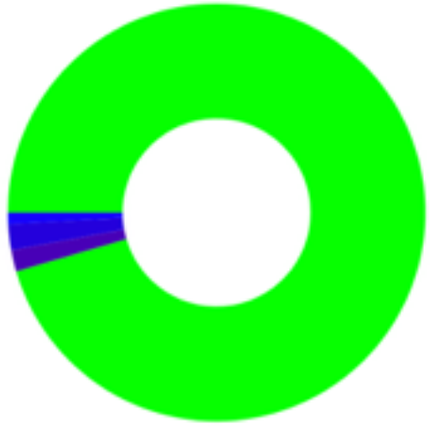
Lock status

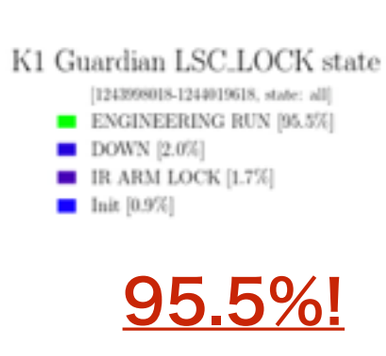


PR3 unstable

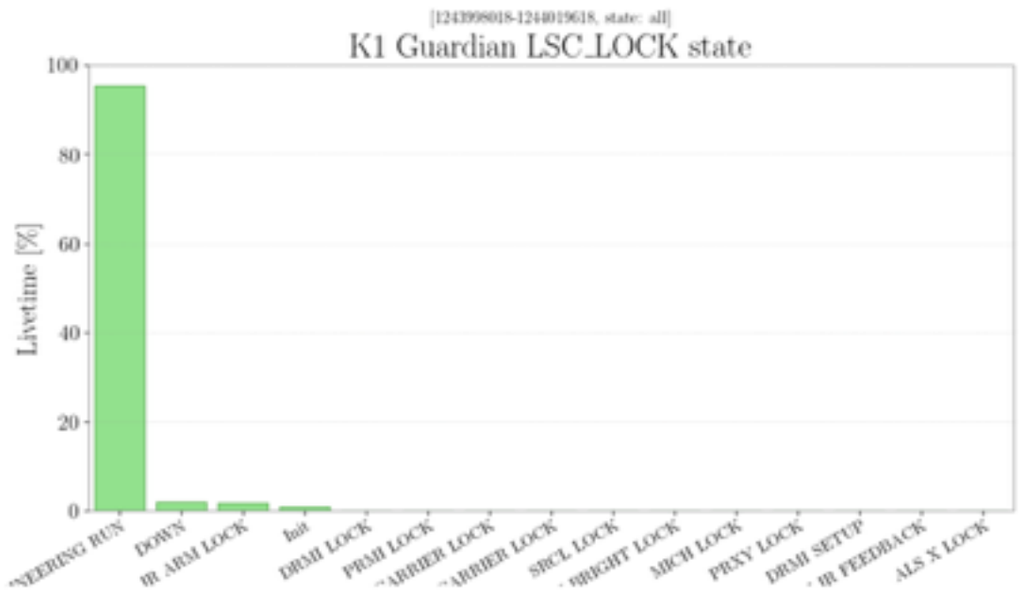
PMC unlock

DAQ trouble

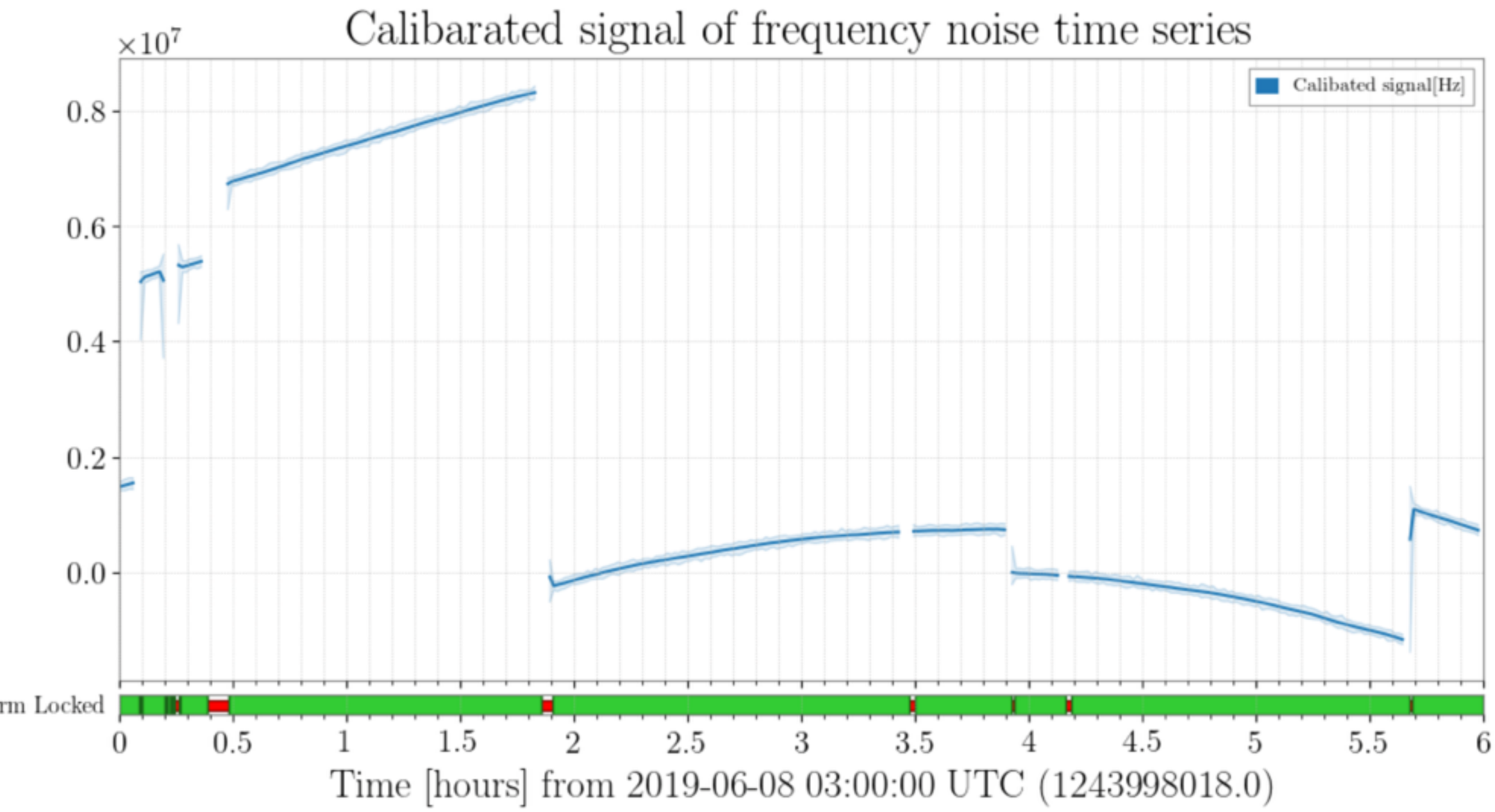




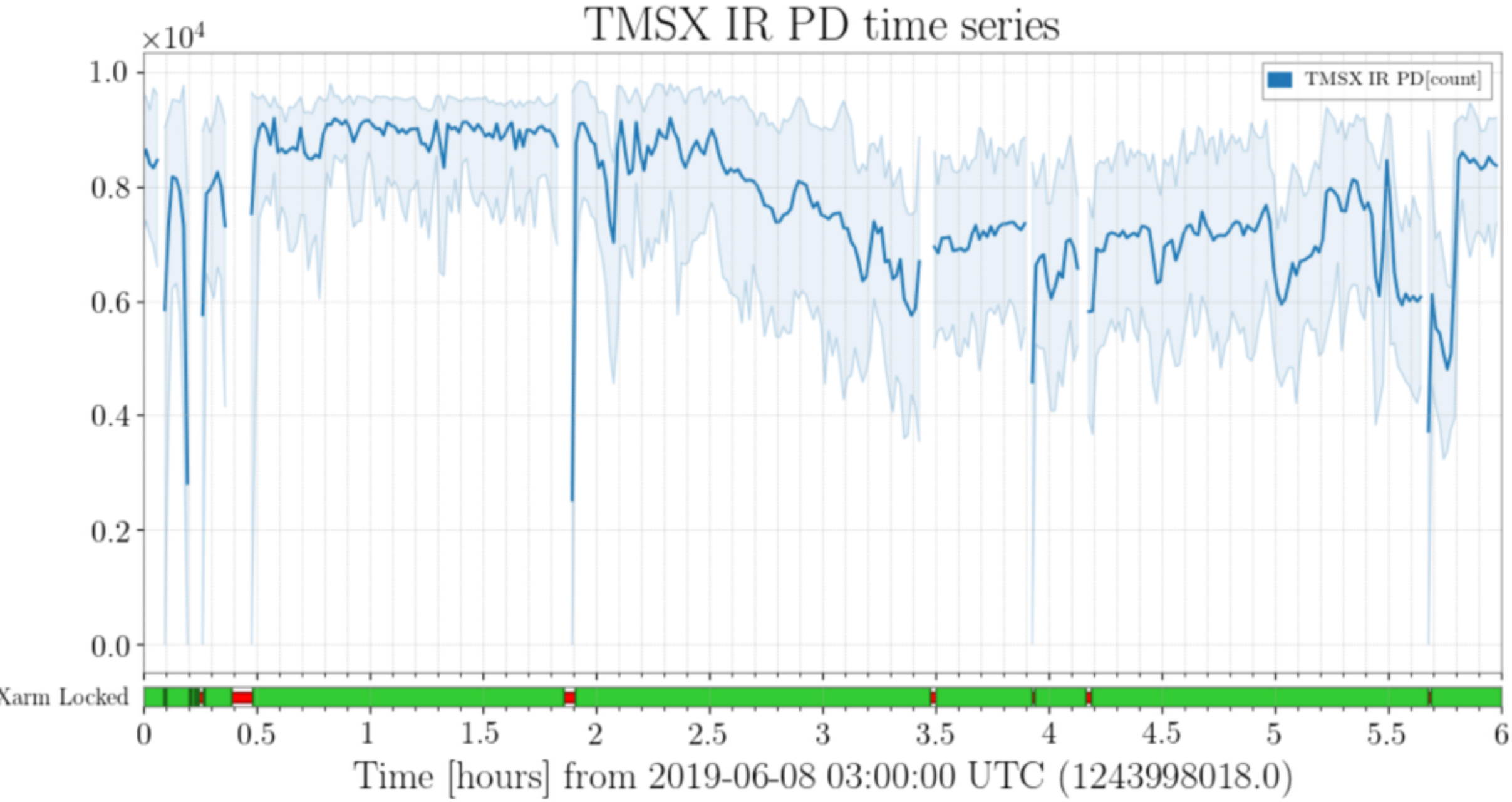
95.5%!



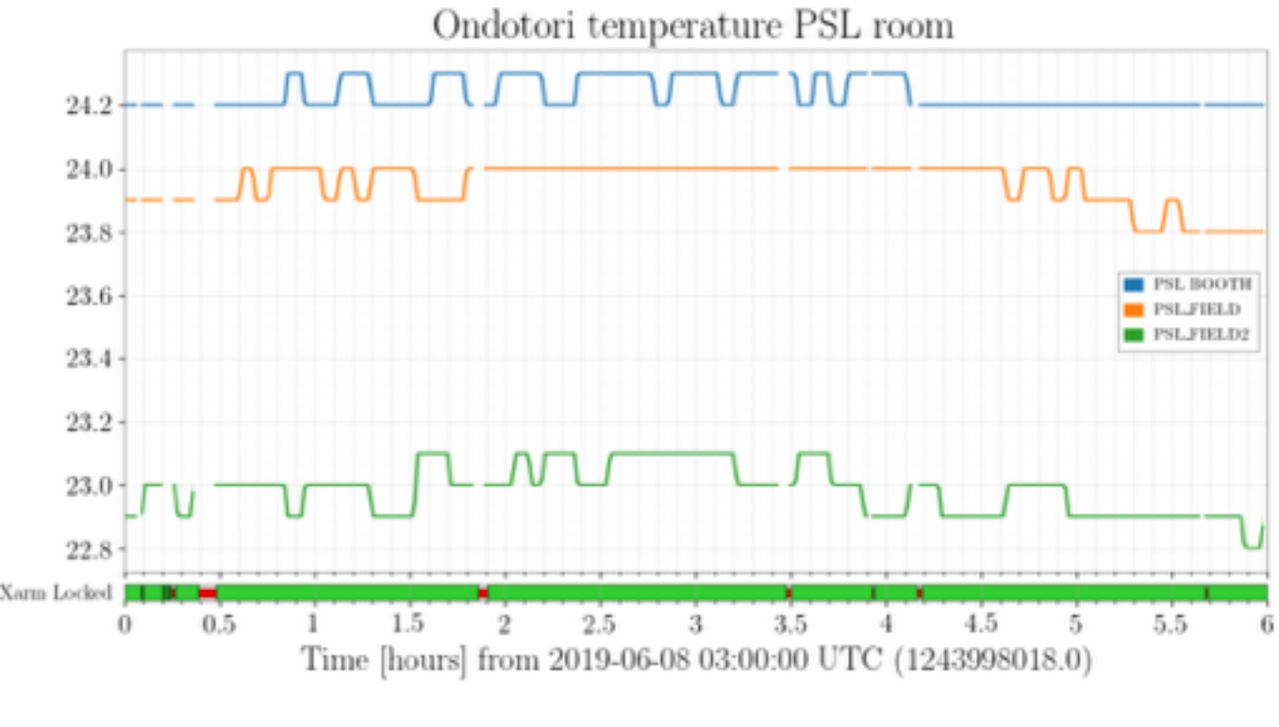
calibrated frequency noise

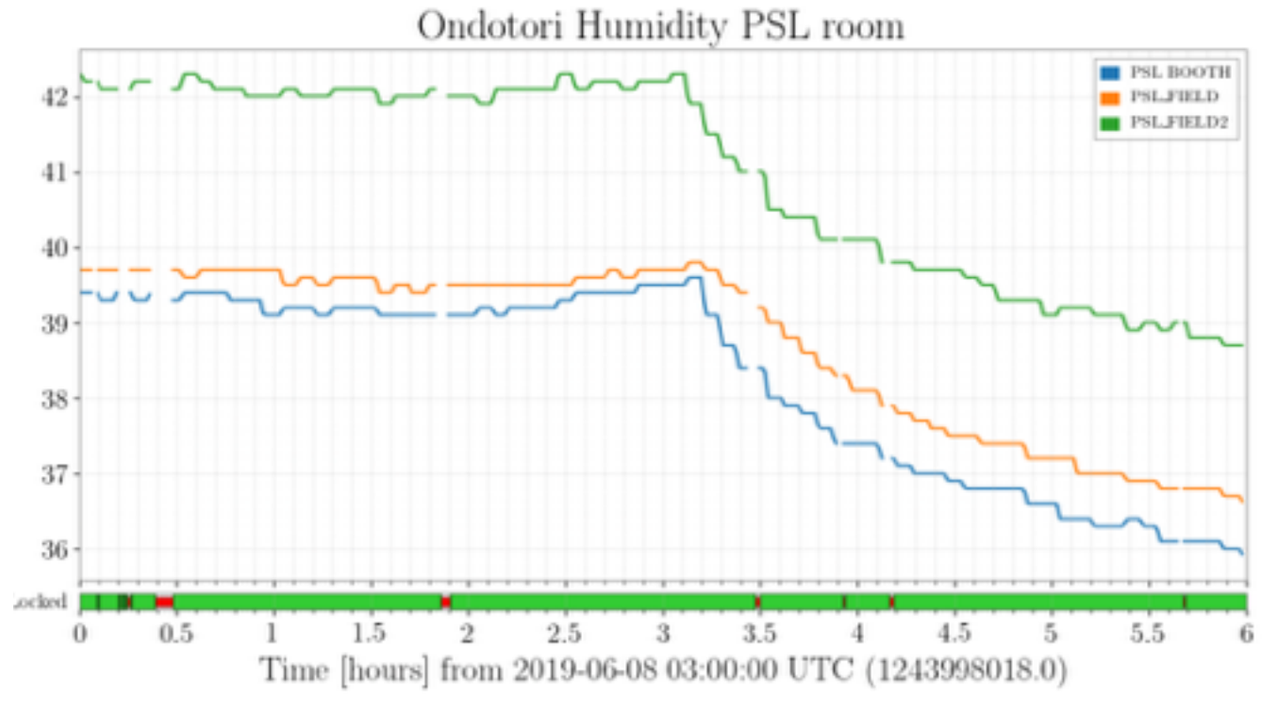


Transmitted light intensity

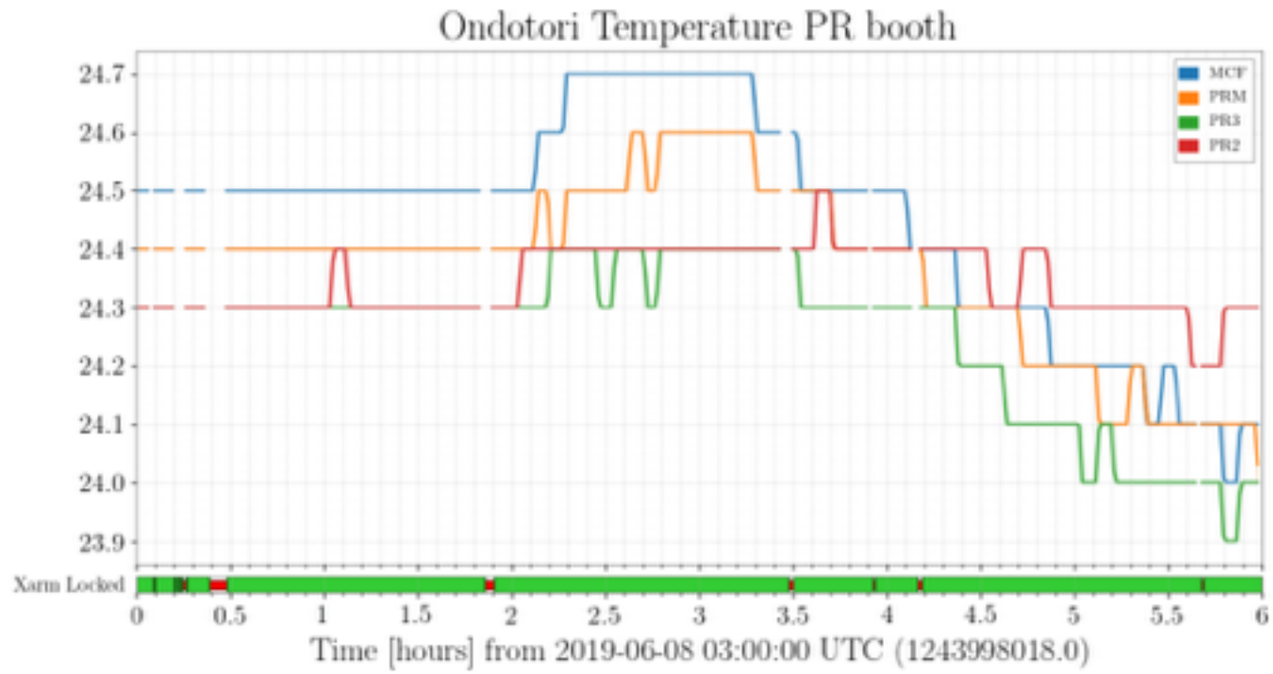


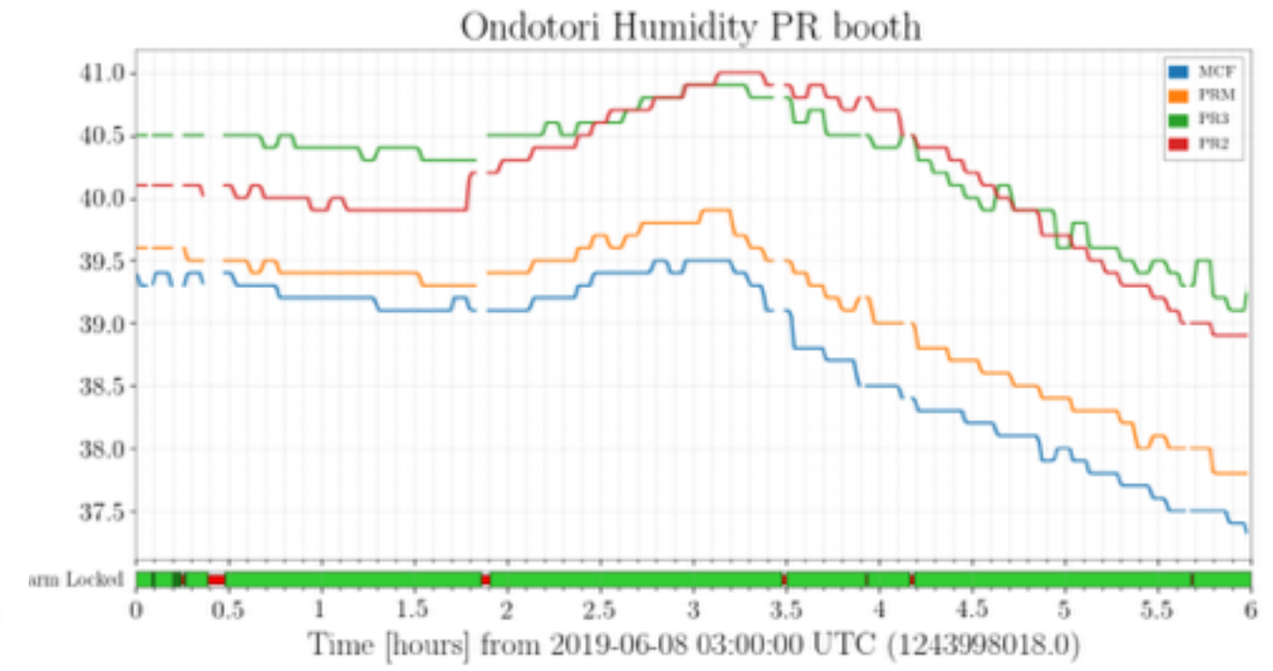
Temperature/Humidity

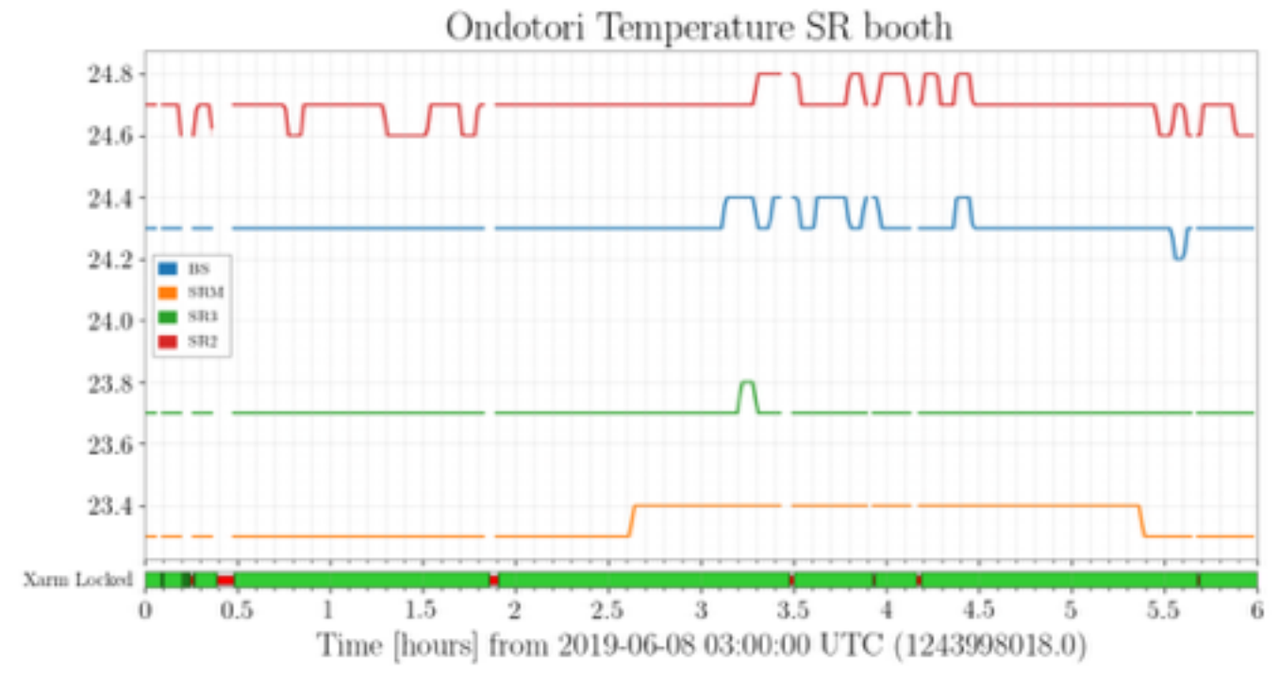


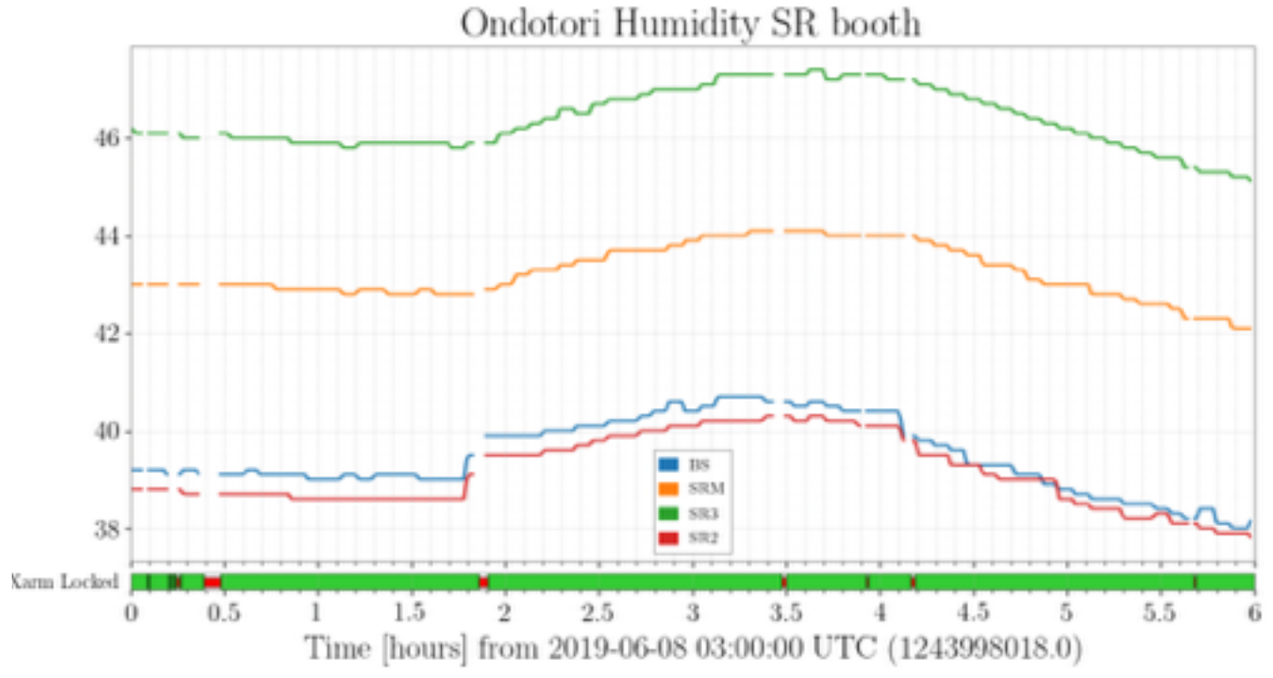


Temperature/Humidity

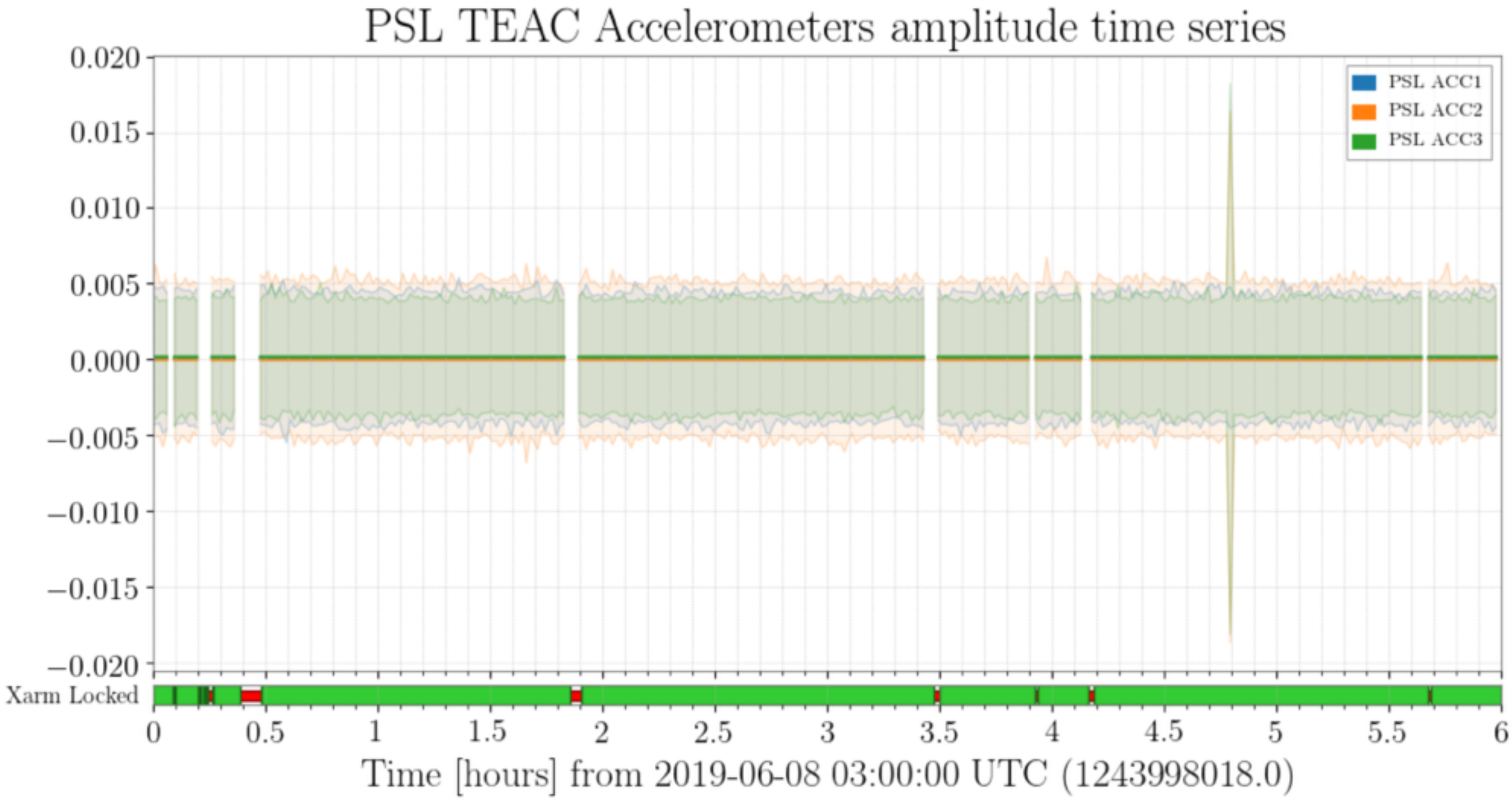




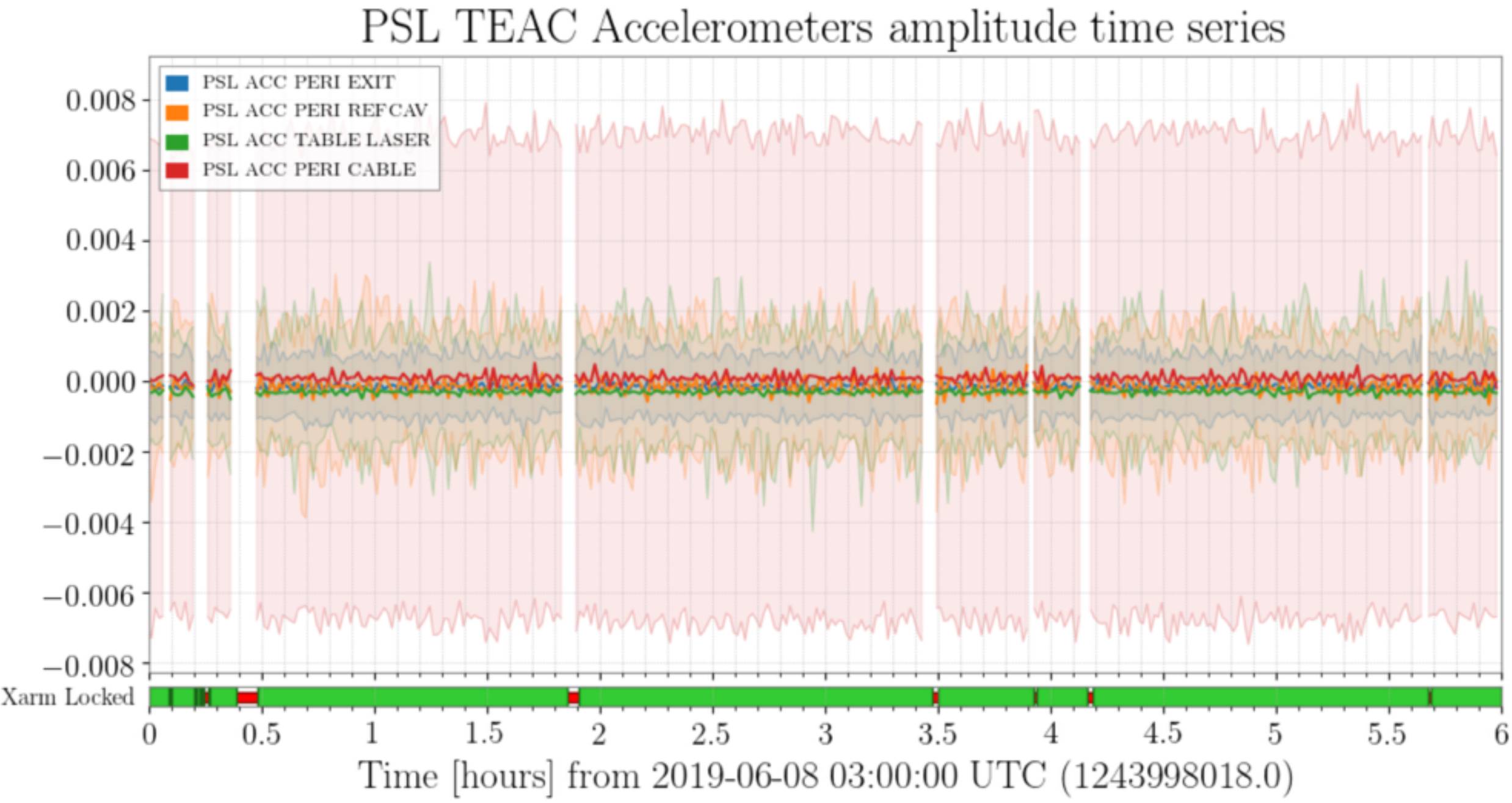




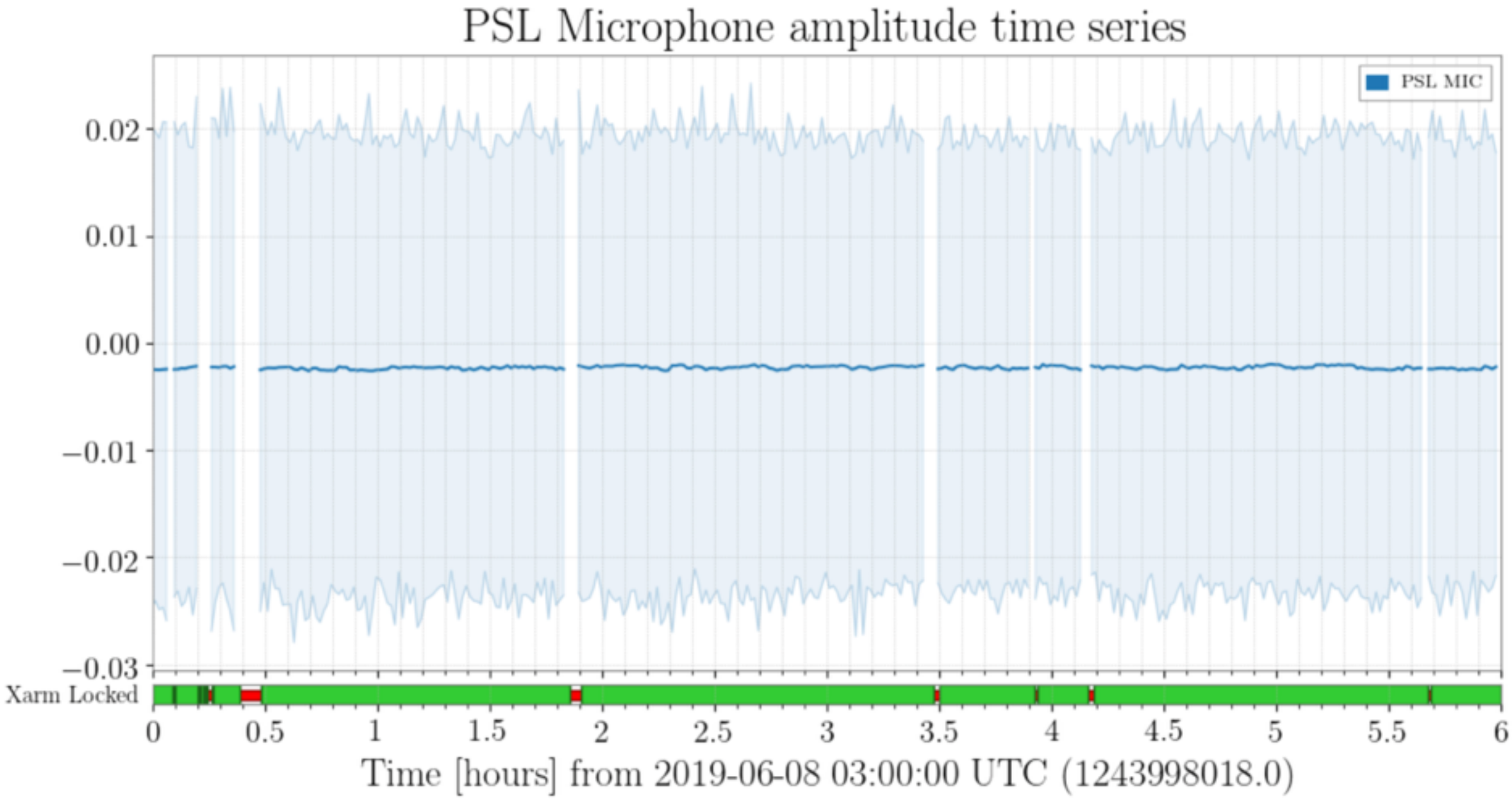
PSL PEMs


PSL TEAC Accelerometers amplitude time series
PSL ACC1
PSL ACC2
PSL ACC3
0.020
0.015
0.010
0.005
0.000
−0.005
−0.010
−0.015
−0.020
Xarm Locked
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
Time [hours] from 2019-06-08 03:00:00 UTC (1243998018.0)

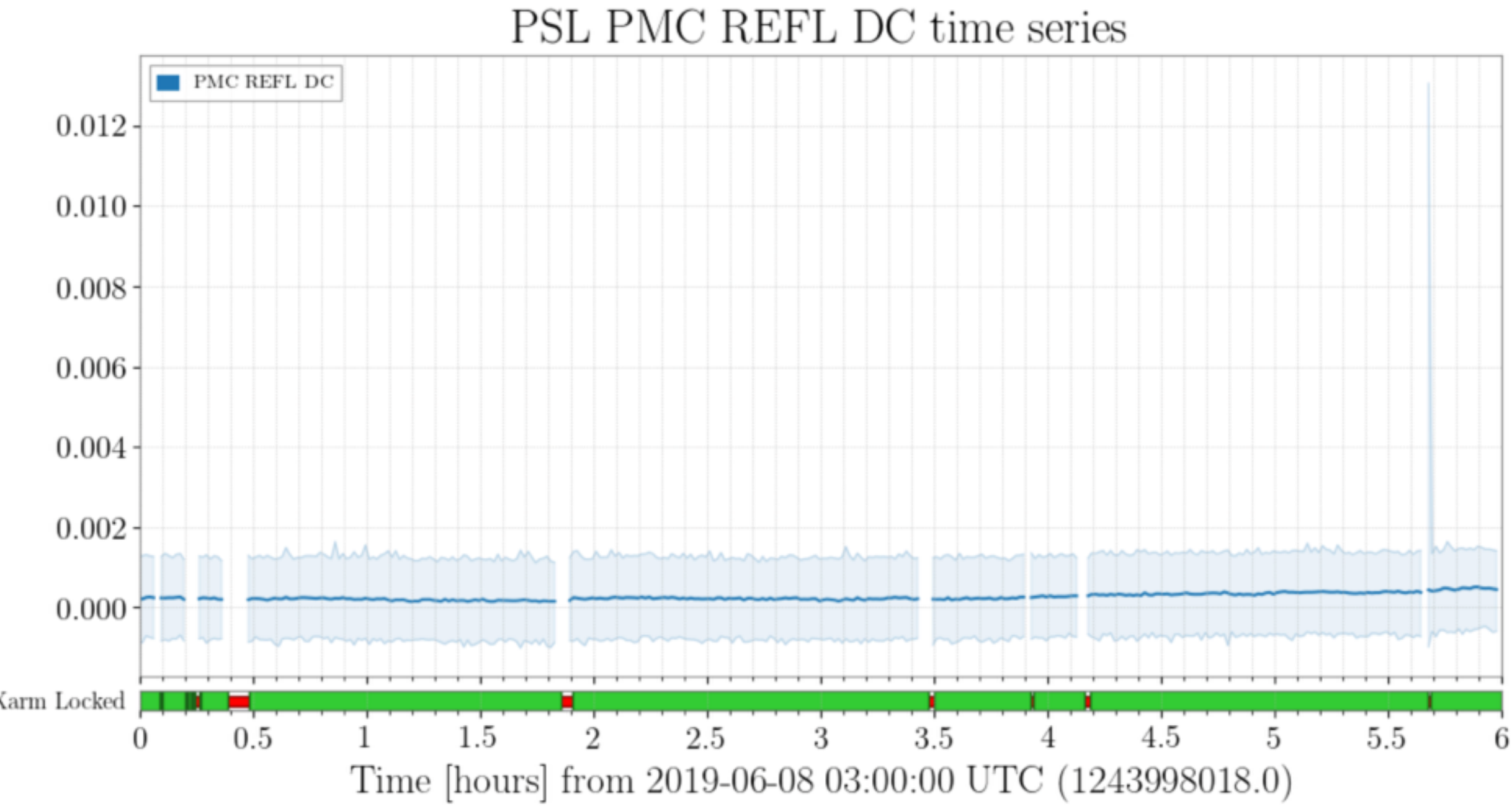
PSL PEMs


PSL TEAC Accelerometers amplitude time series
PSL ACC PERI EXIT
PSL ACC PERI REFCAV
PSL ACC TABLE LASER
PSL ACC PERI CABLE
0.008
0.006
0.004
0.002
0.000
−0.002
−0.004
−0.006
−0.008
Xarm Locked
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
Time [hours] from 2019-06-08 03:00:00 UTC (1243998018.0)

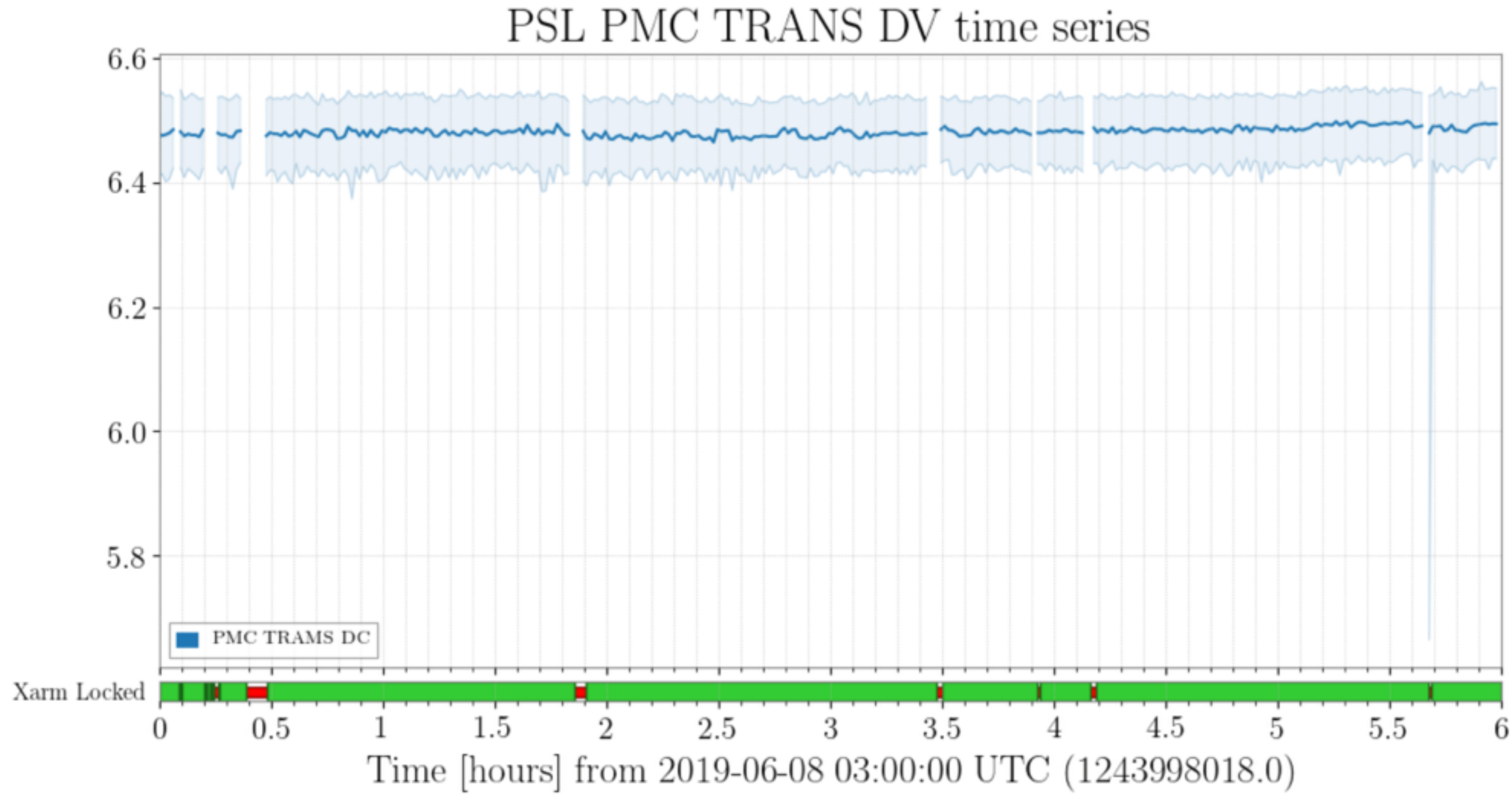
PSL PEMs


PSL Microphone amplitude time series
PSL MIC
0.02
0.01
0.00
−0.01
−0.02
−0.03
Xarm Locked
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
Time [hours] from 2019-06-08 03:00:00 UTC (1243998018.0)

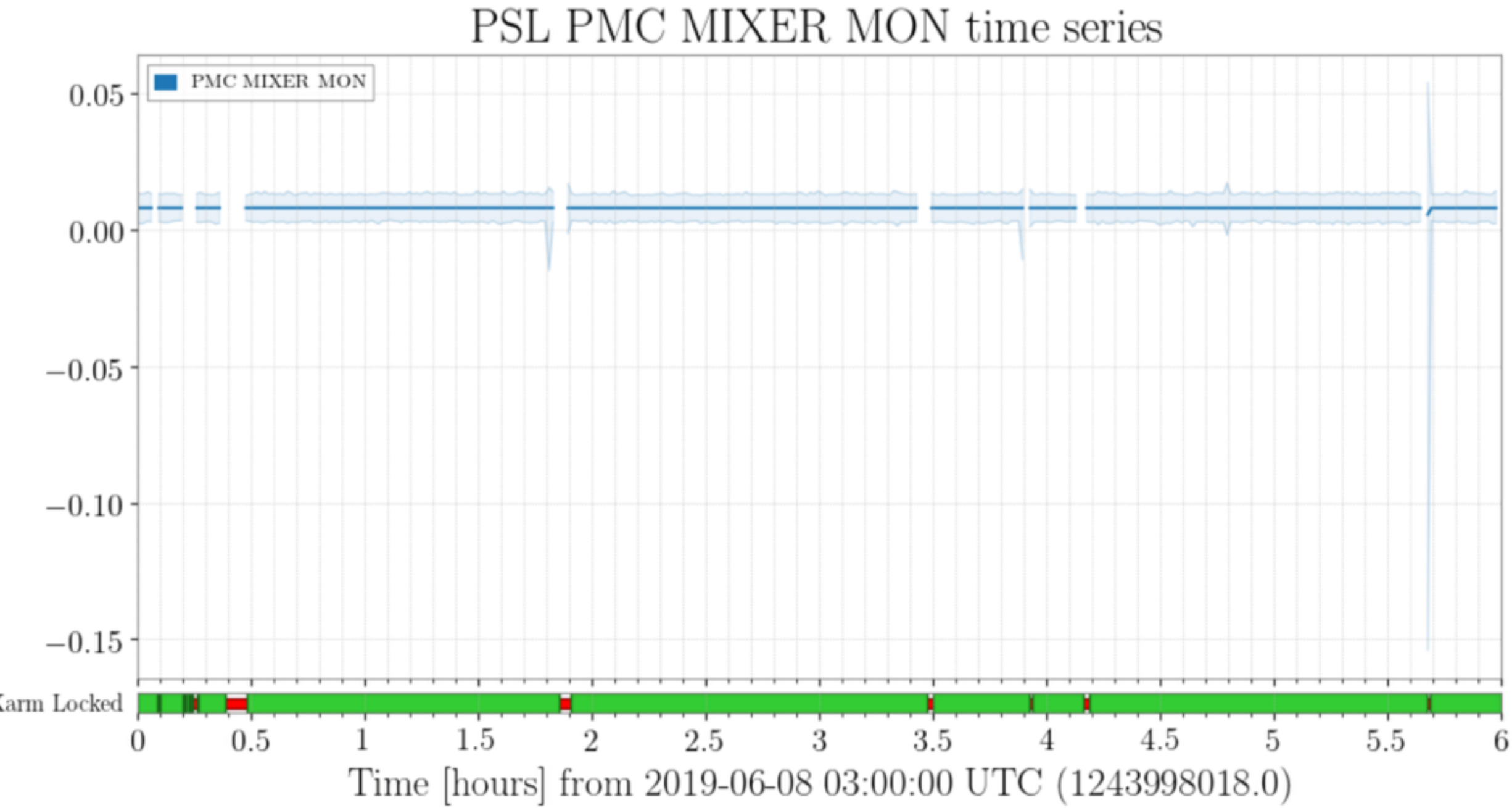
PSL PMC signals



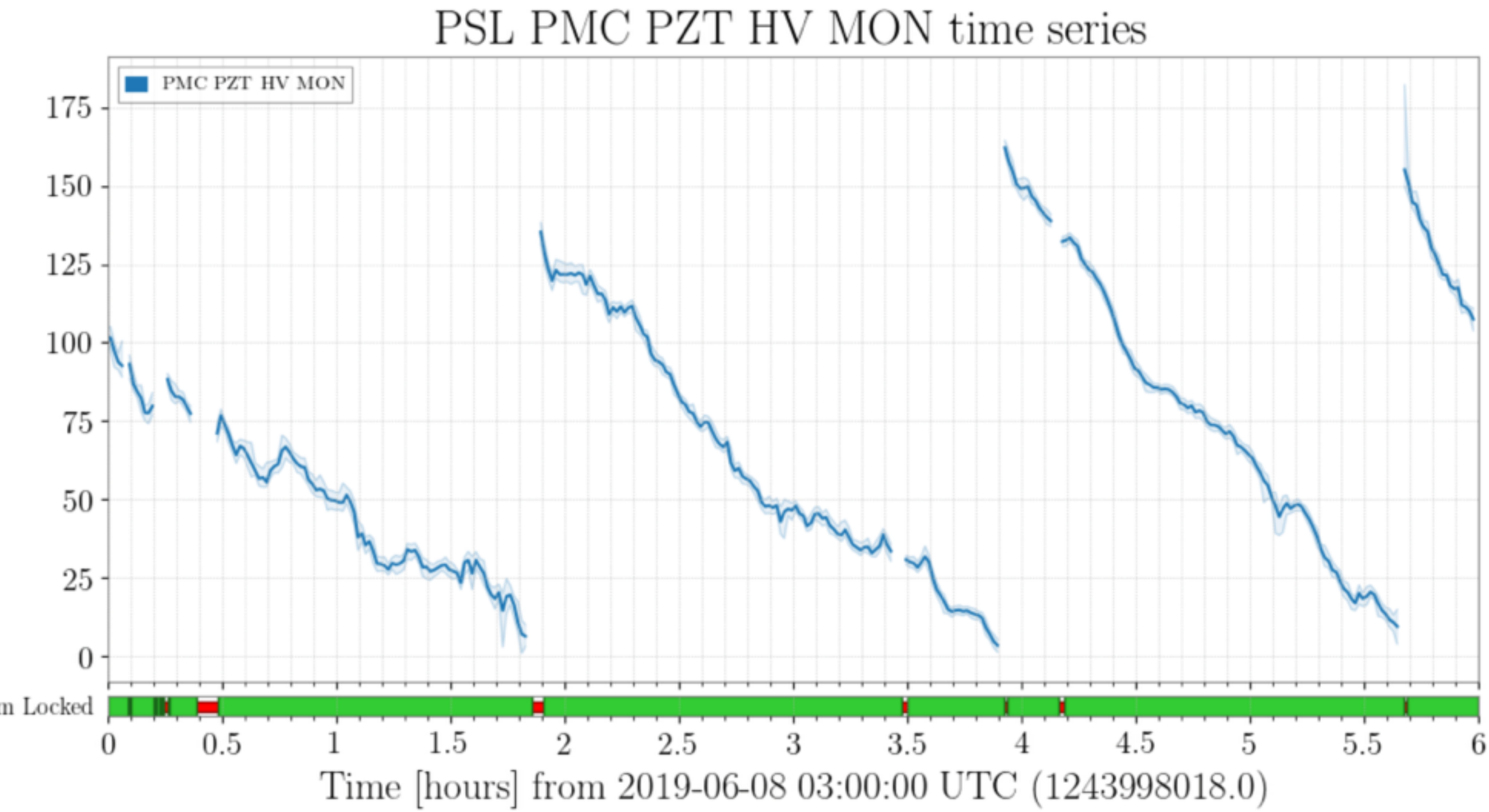
PSL PMC signals



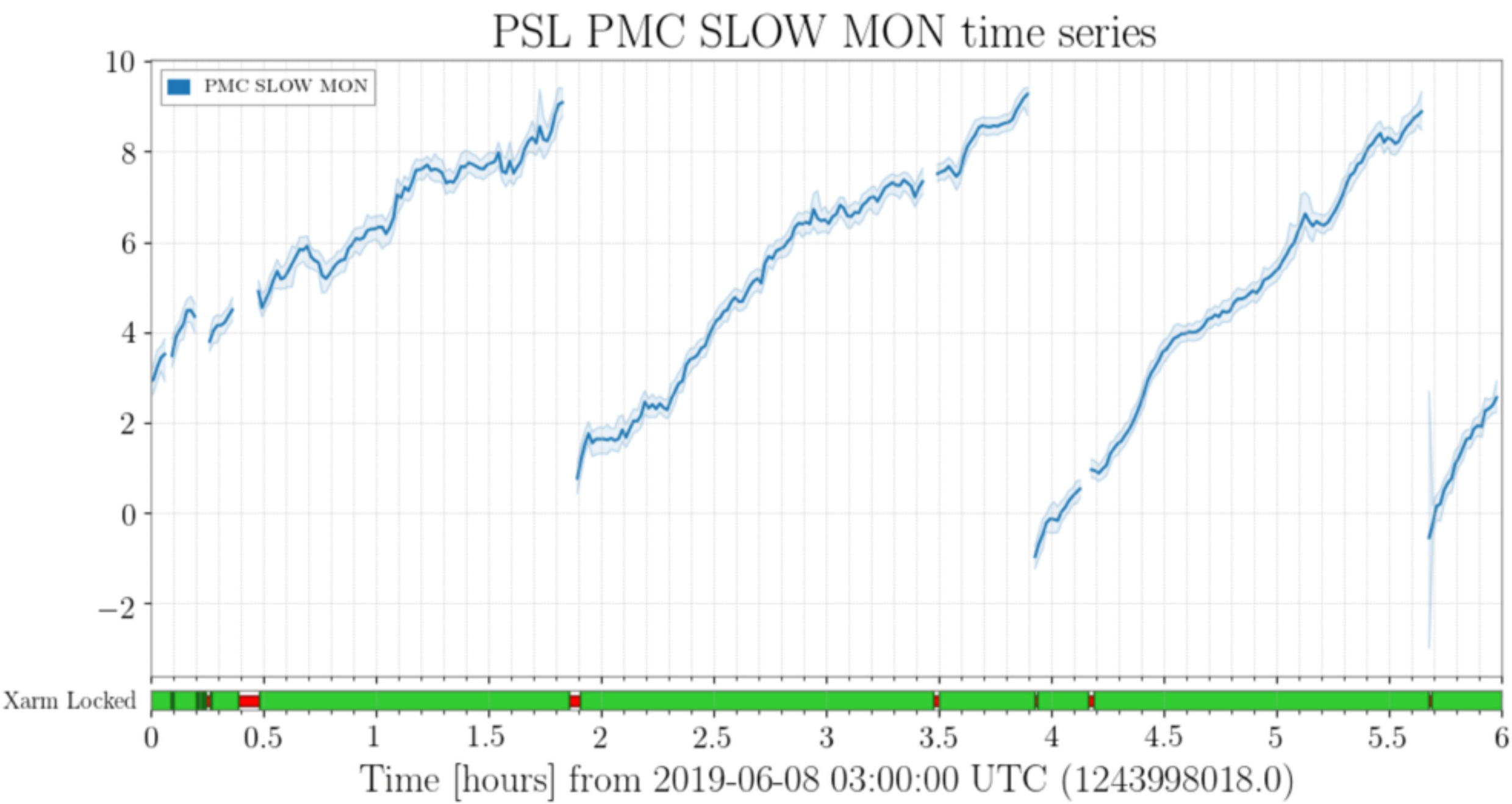
PSL PMC signals



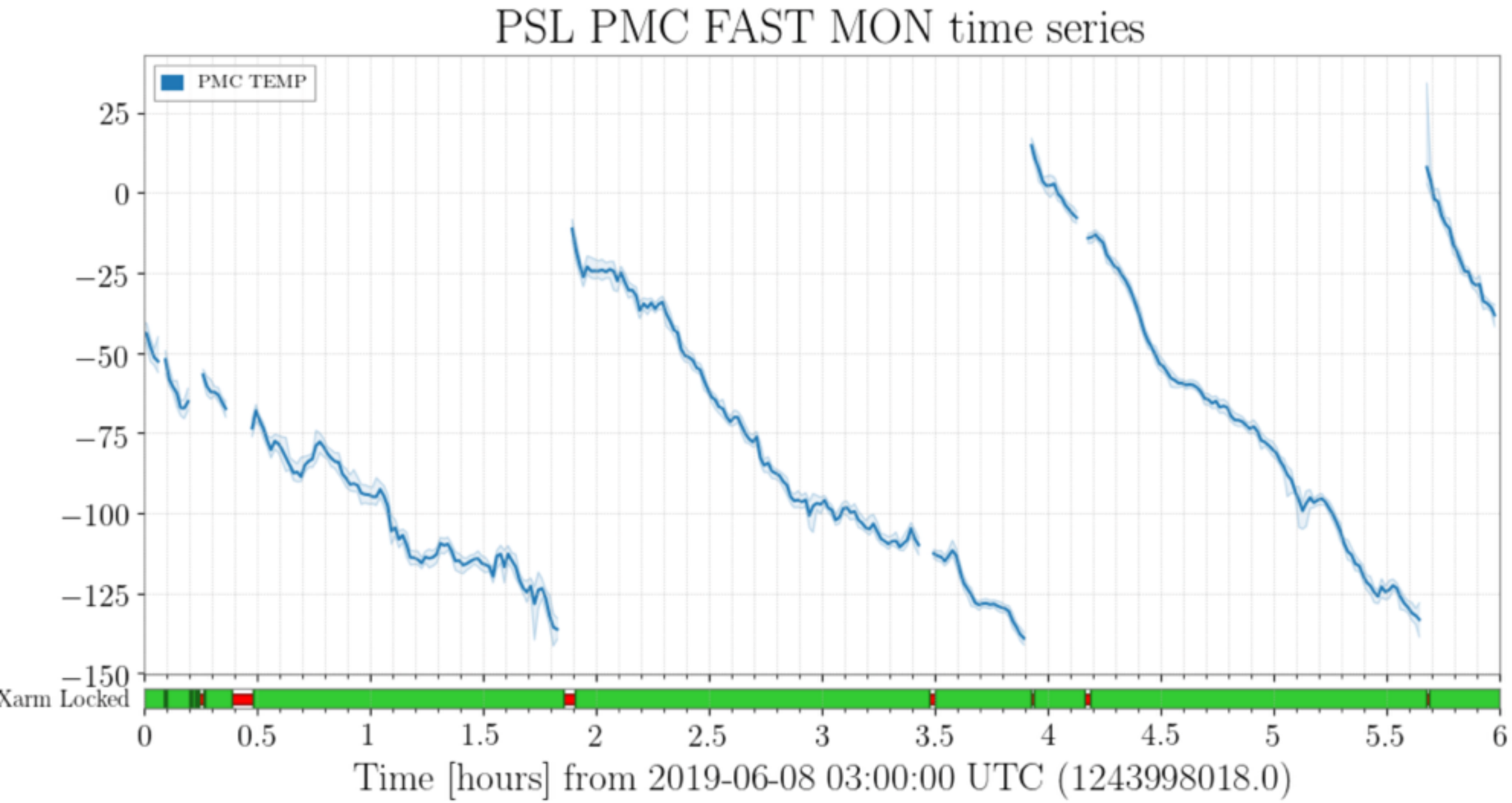
PSL PMC signals



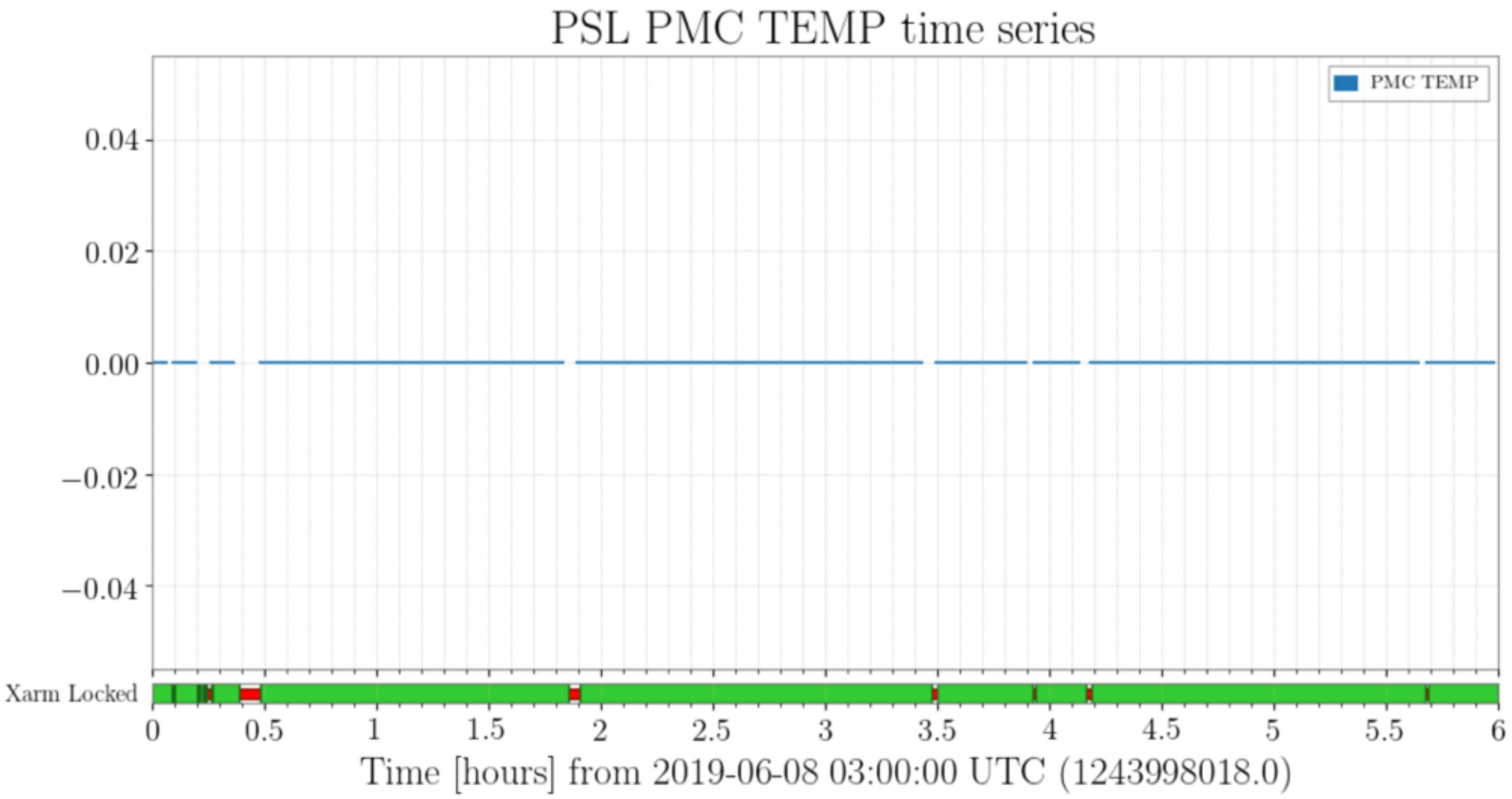
PSL PMC signals



PSL PMC signals



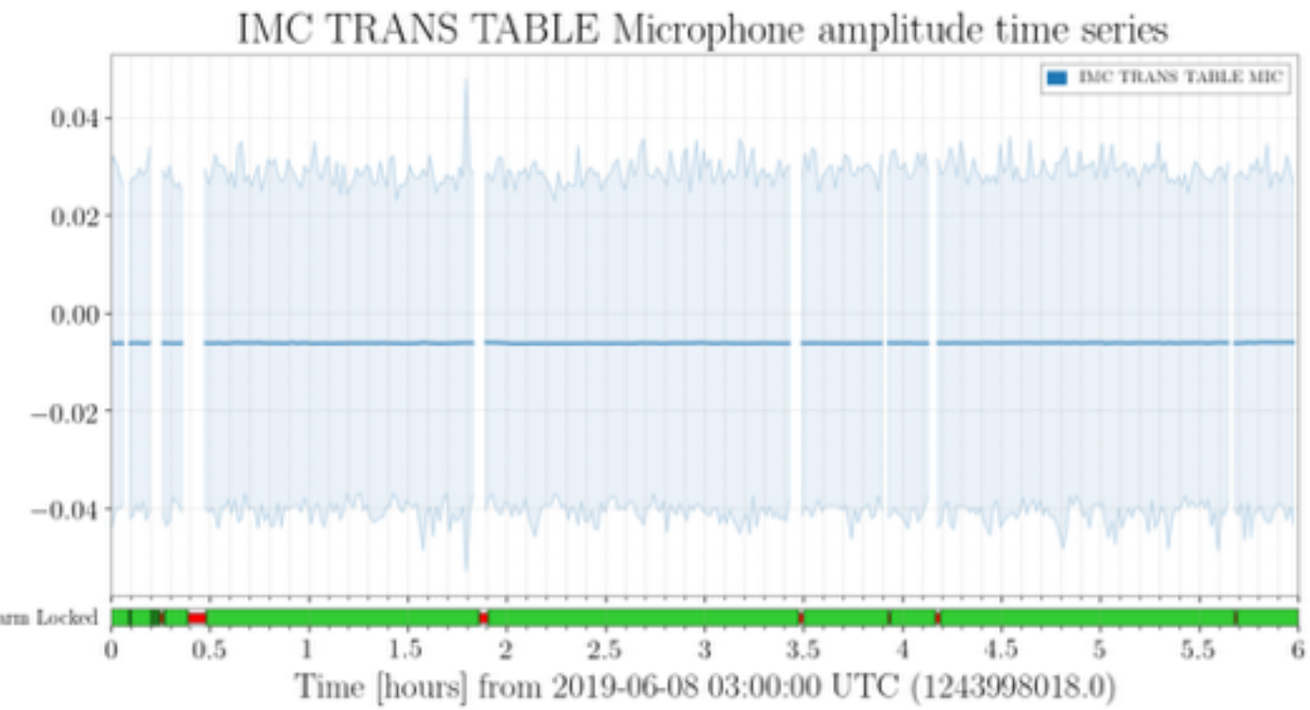
PSL PMC signals



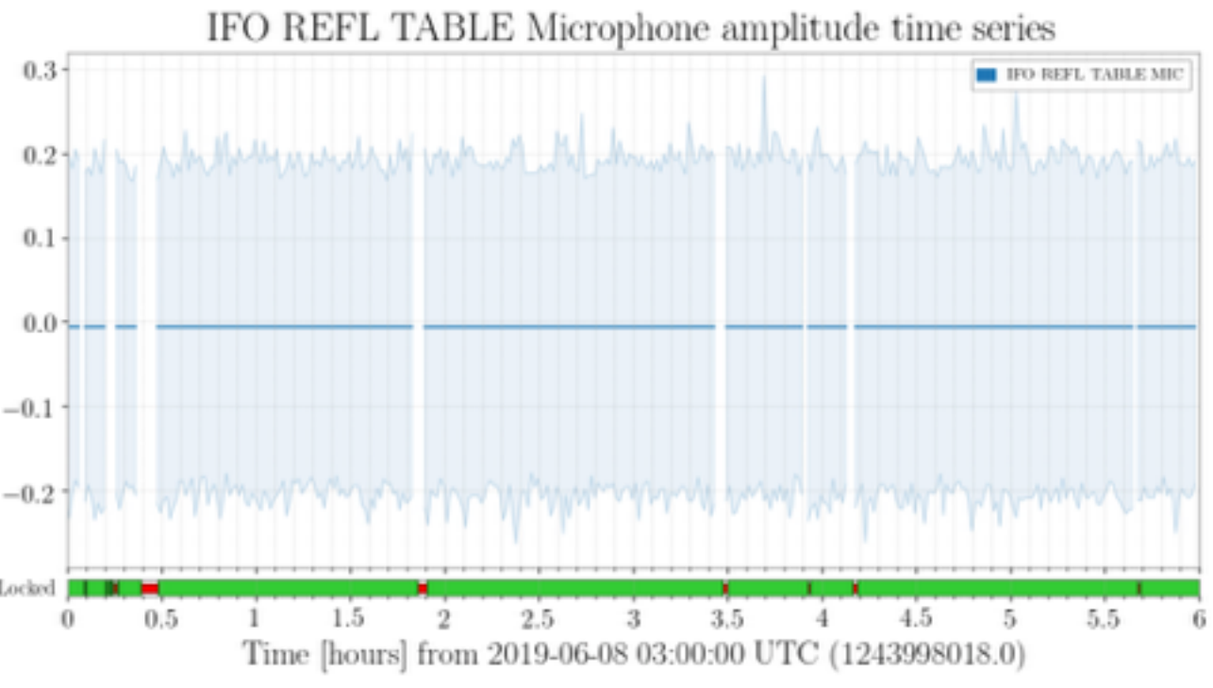
IMC PEMs

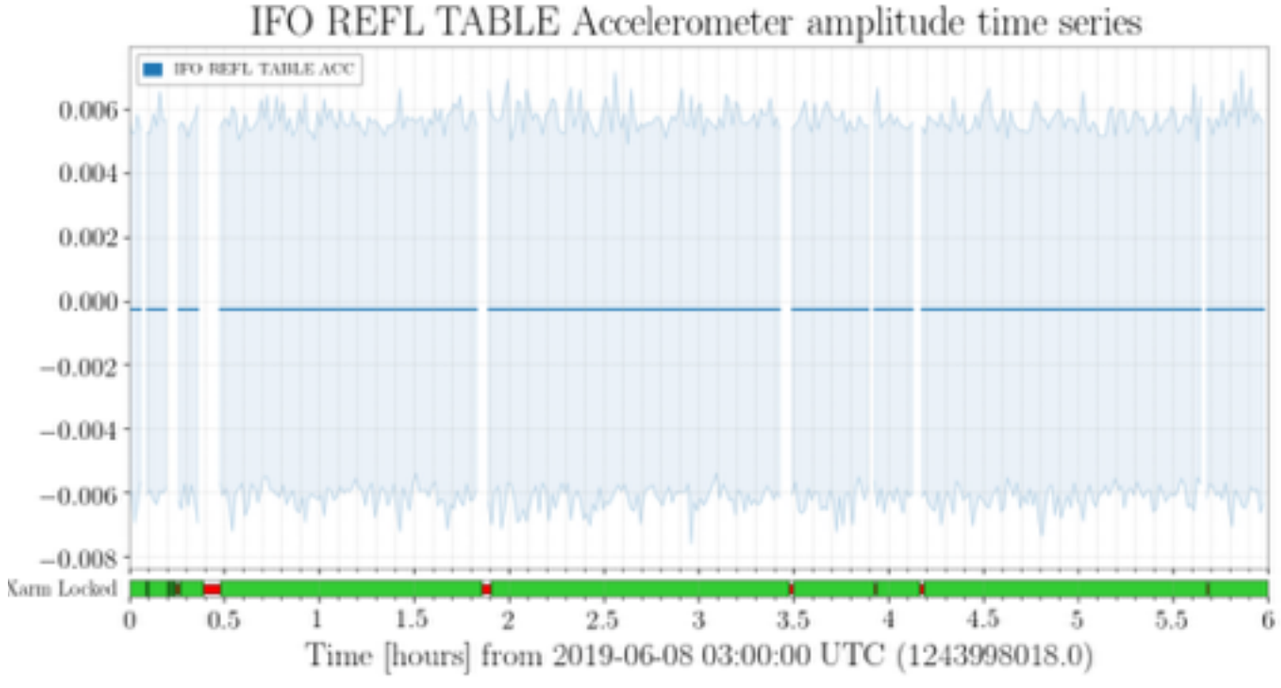
IMC REFL TABLE Microphone amplitude time series
IMC REFL TABLE MIC
Time [hours] from 2019-06-08 03:00:00 UTC (1243998018.0)

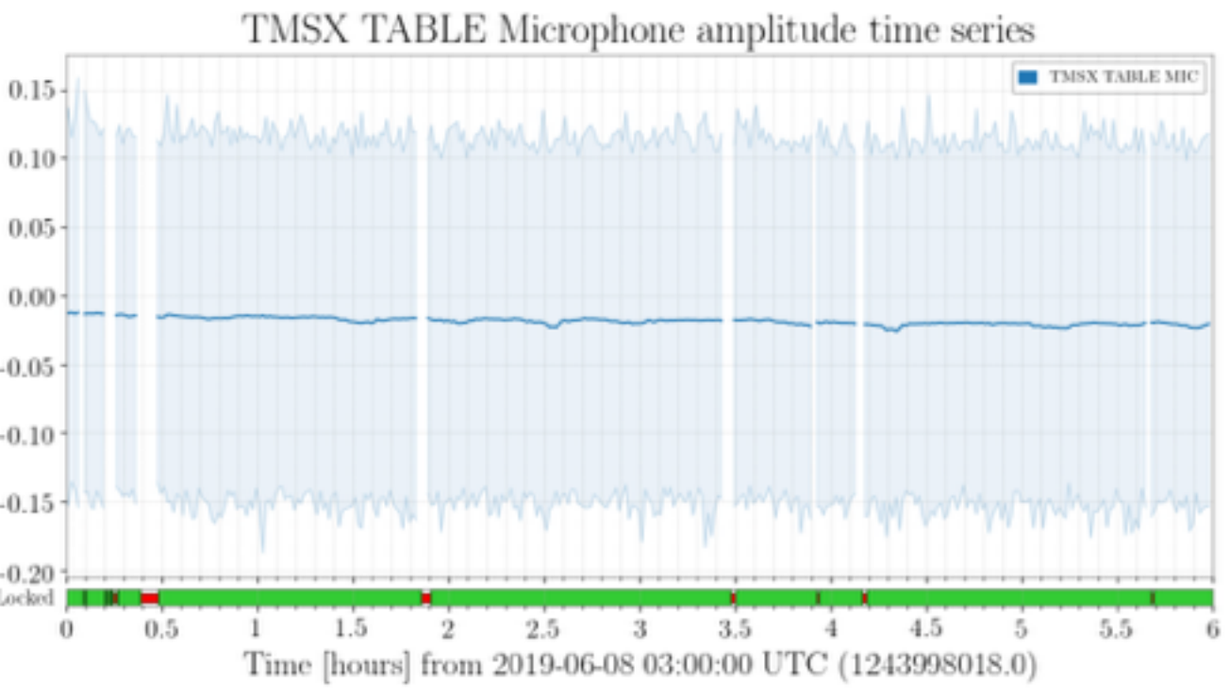
IMC REFL TABLE Accelerometer amplitude time series
IMC REFL TABLE ACC
Locked
Time [hours] from 2019-06-08 03:00:00 UTC (1243998018.0)

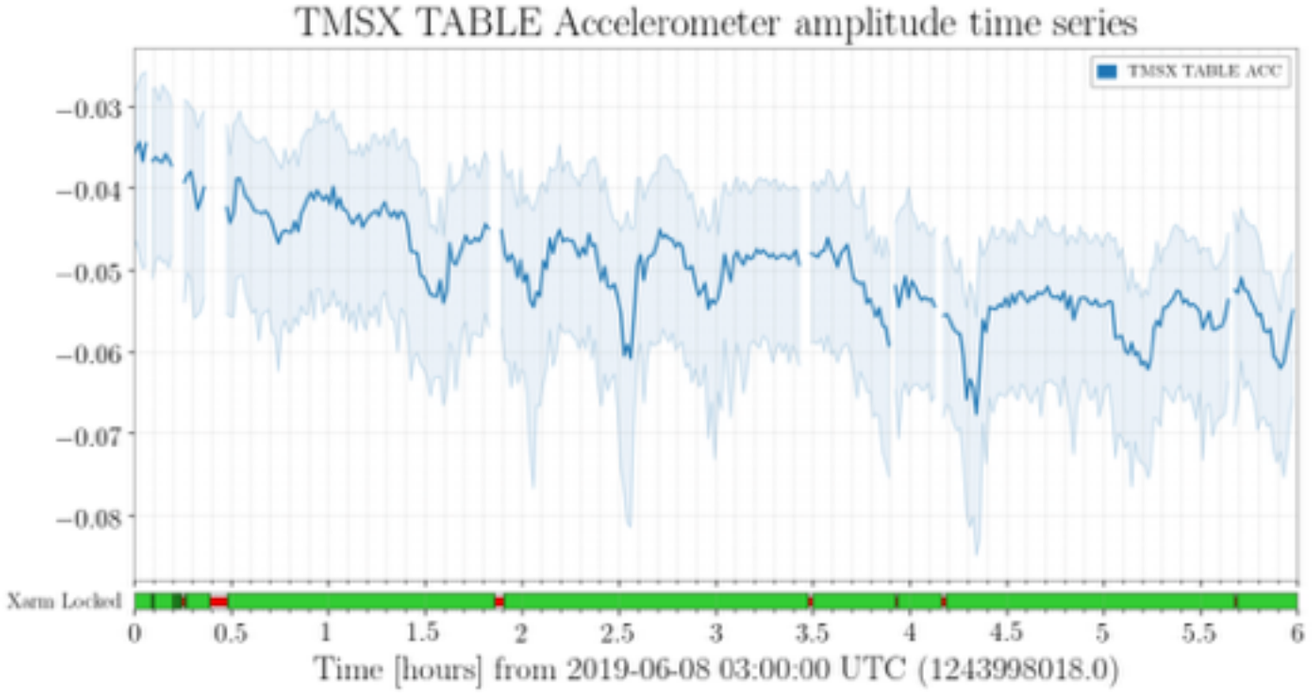

IMC TRANS TABLE Microphone amplitude time series
IMC TRANS TABLE MIC
Time [hours] from 2019-06-08 03:00:00 UTC (1243998018.0)

IFO refl / TMSX PEMs

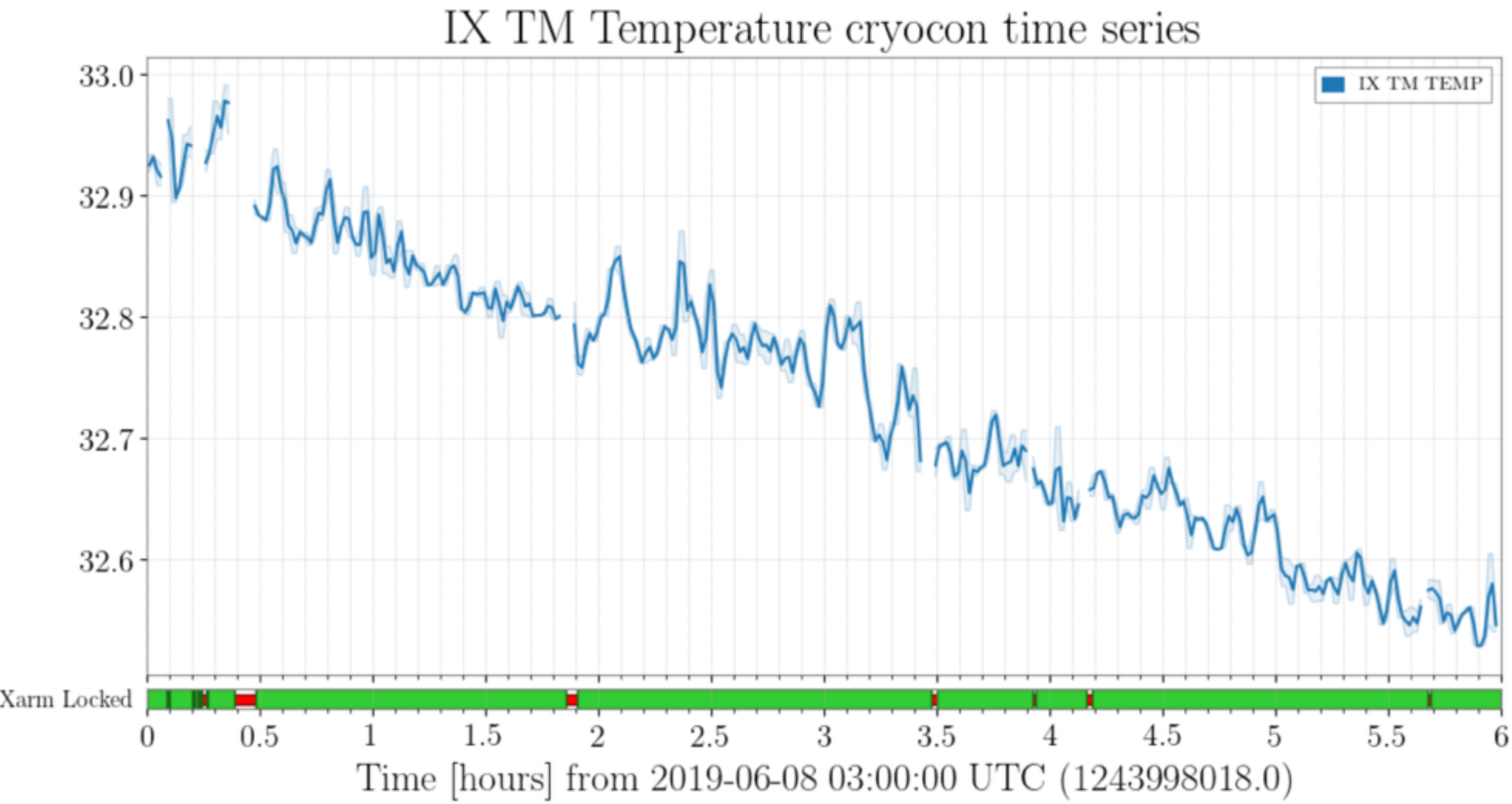




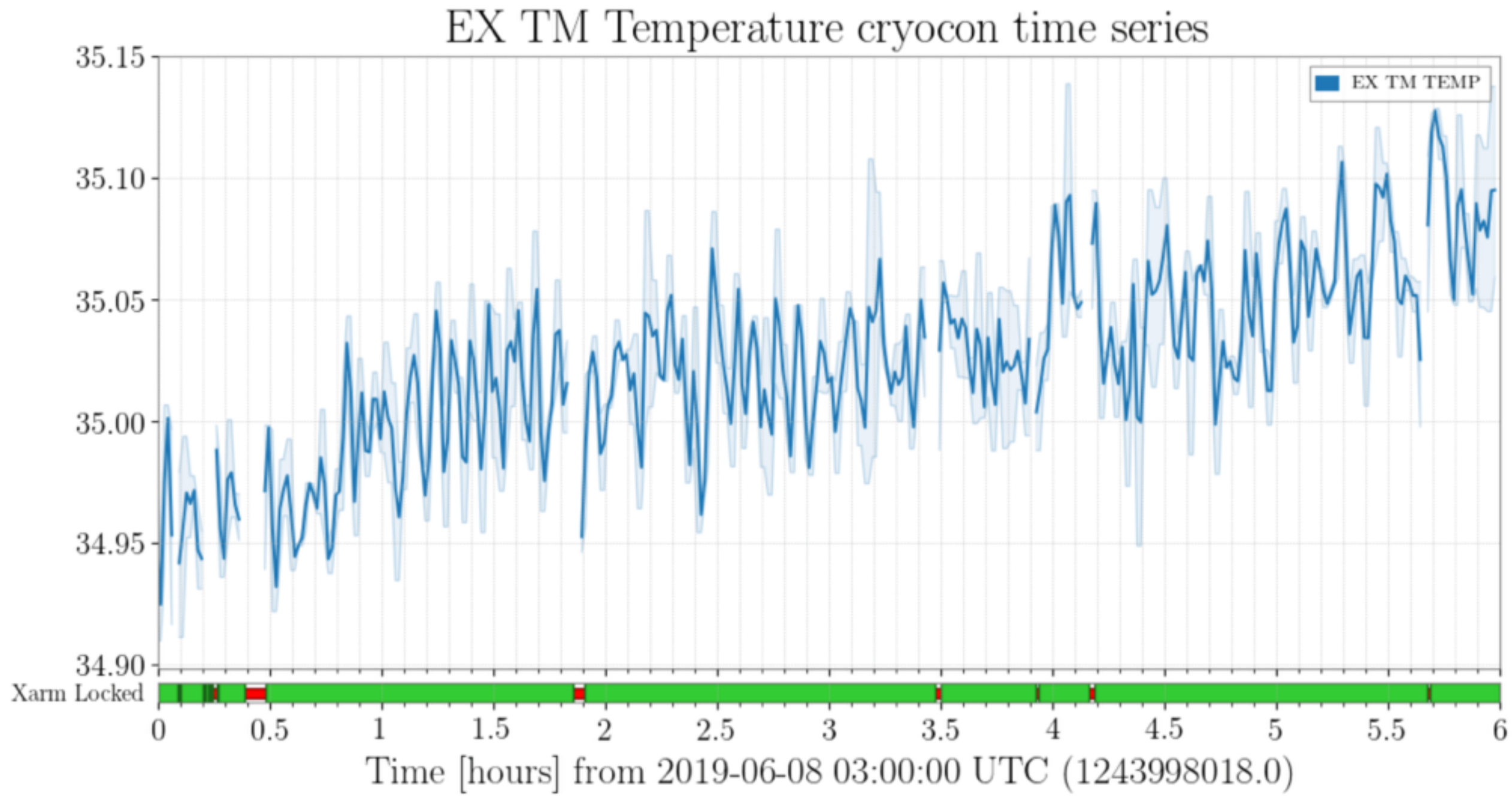




IX TM temp


IX TM Temperature cryocon time series
IX TM TEMP
33.0
32.9
32.8
32.7
32.6
Xarm Locked
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
Time [hours] from 2019-06-08 03:00:00 UTC (1243998018.0)

EX TM temp


EX TM Temperature cryocon time series
EX TM TEMP
35.15
35.10
35.05
35.00
34.95
34.90
Xarm Locked
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
Time [hours] from 2019-06-08 03:00:00 UTC (1243998018.0)

Summary and future work

- (Very) basic plots for the important channels
  - Only time series
  - Duty cycle from the guardian
- Next step (before chief meeting next week)
  - Add the plots for the control and suspension
  - Spectrogram
  - (If possible) glitch and line

Backups

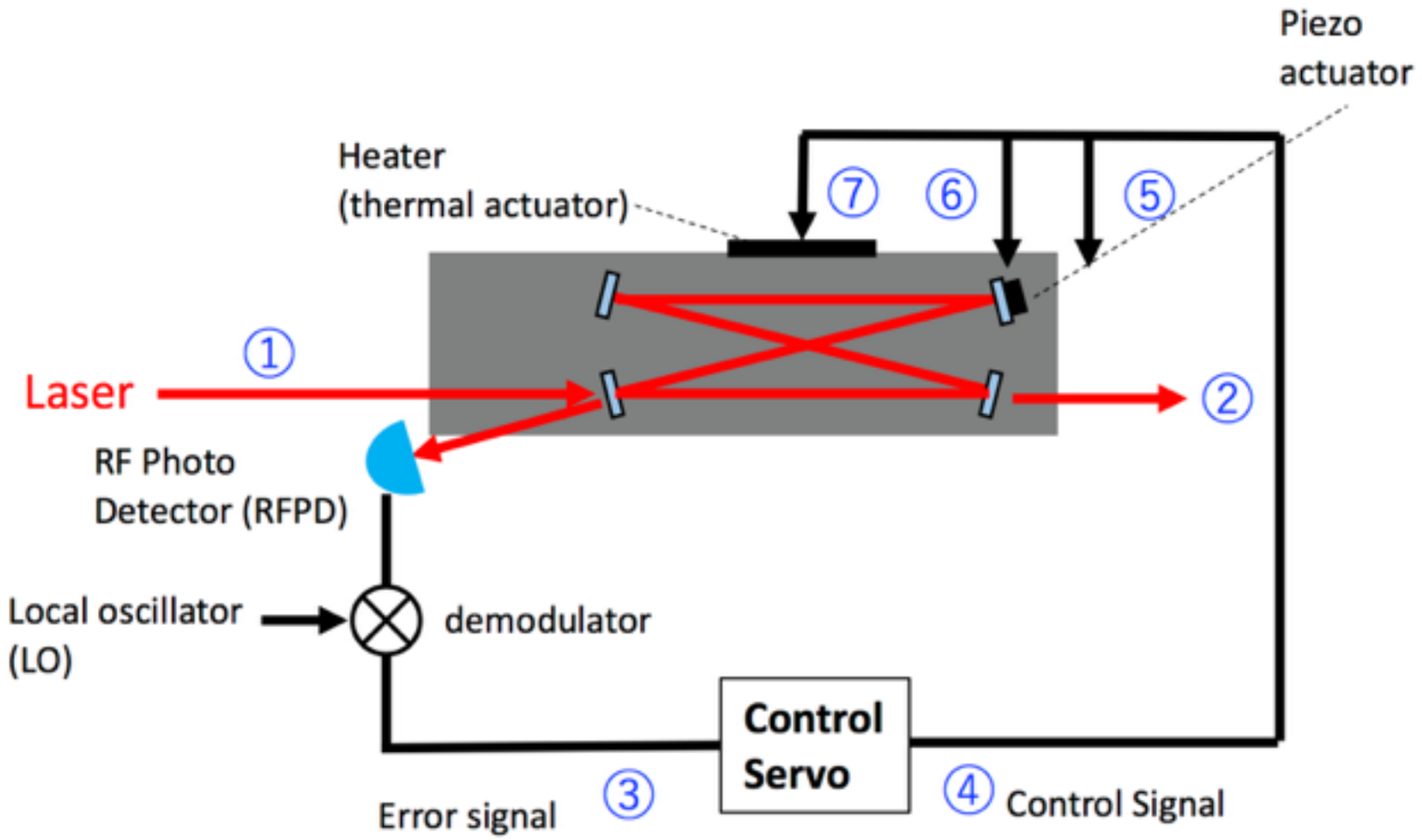
PSL room

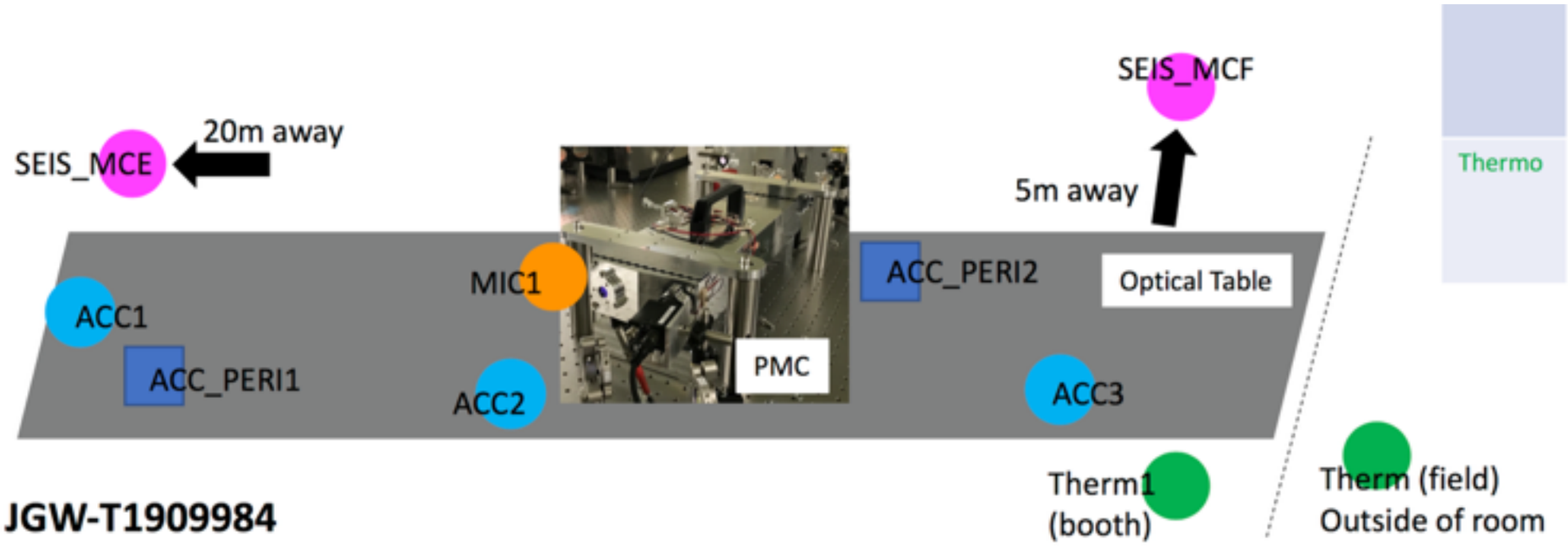
Important channels (DQ)

	Channel Name	Physical meaning
1	K1:PSL-PMC_CAV_REFL_DC_OUT_DQ	Power at the reflection port
2	K1:PSL-PMC_CAV_TRANS_DV_OUT_DQ	Power at the transmitting port
3	K1:PSL-PMC_MIXER_MON_OUT_DQ	Error signal of the PMC cavity
4	K1:PSL-PMC_PZT_HV_MON_OUT_DQ	Control signal
5	K1:PSL-PMC_SLOW_MON_OUT_DQ K1:PSL-PMC_PZT_SLOW_MON_OUT_DQ	Slow feedback signal
6	K1:PSL-PMC_PZT_FAST_MON_OUT_DQ K1:PSL-PMC_FAST_MON_OUT_DQ	Fast feedback signal
7	K1:PSL-PMC_TEMP_OUT_DQ	Feedback signal for the temperature loop (slowest control)

* They are all "unsafe" each other

Control Diagram





JGW-T1909984