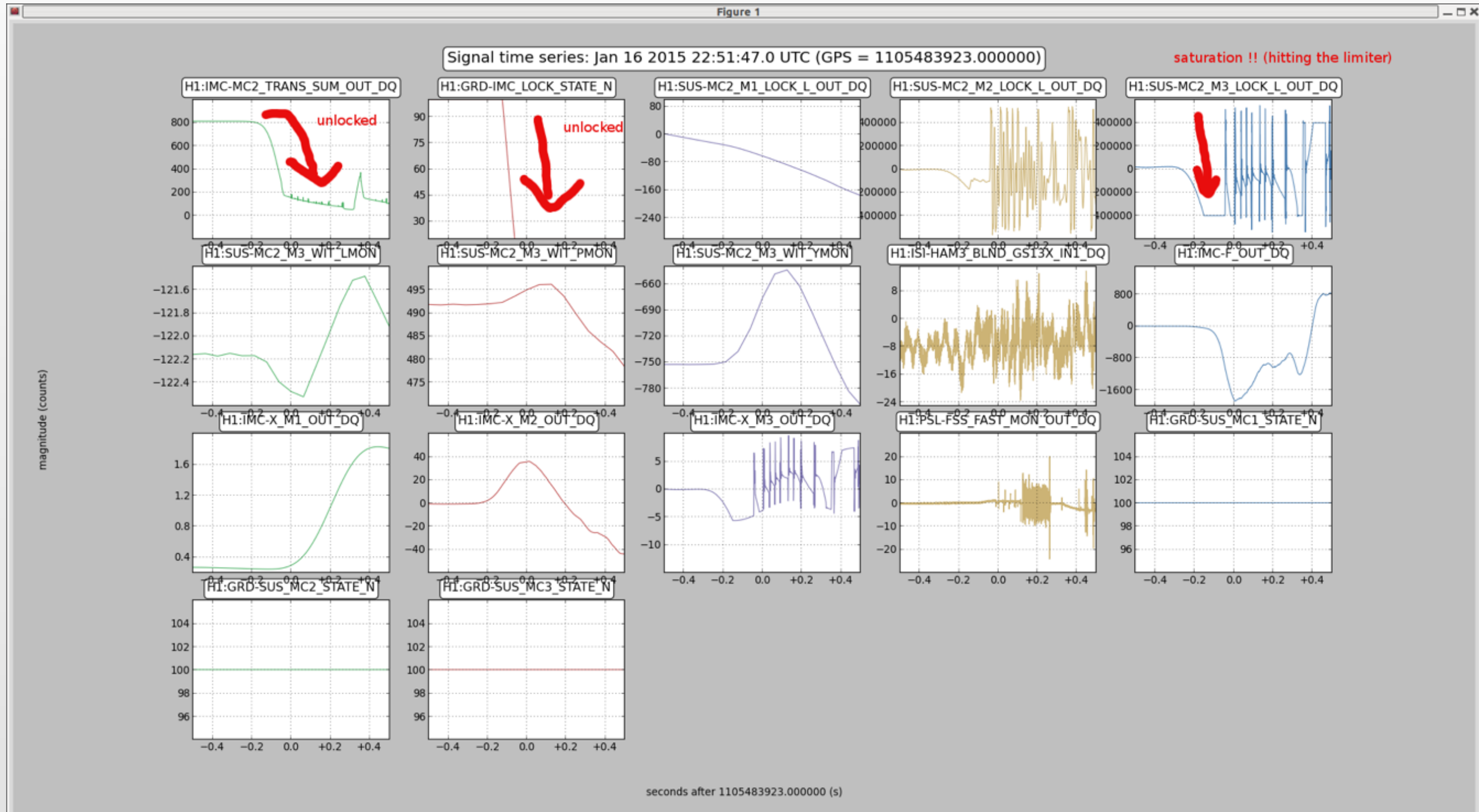# DetCahr ミーティング
aLOG LHO

2015年1月23日

DetChar Meeting
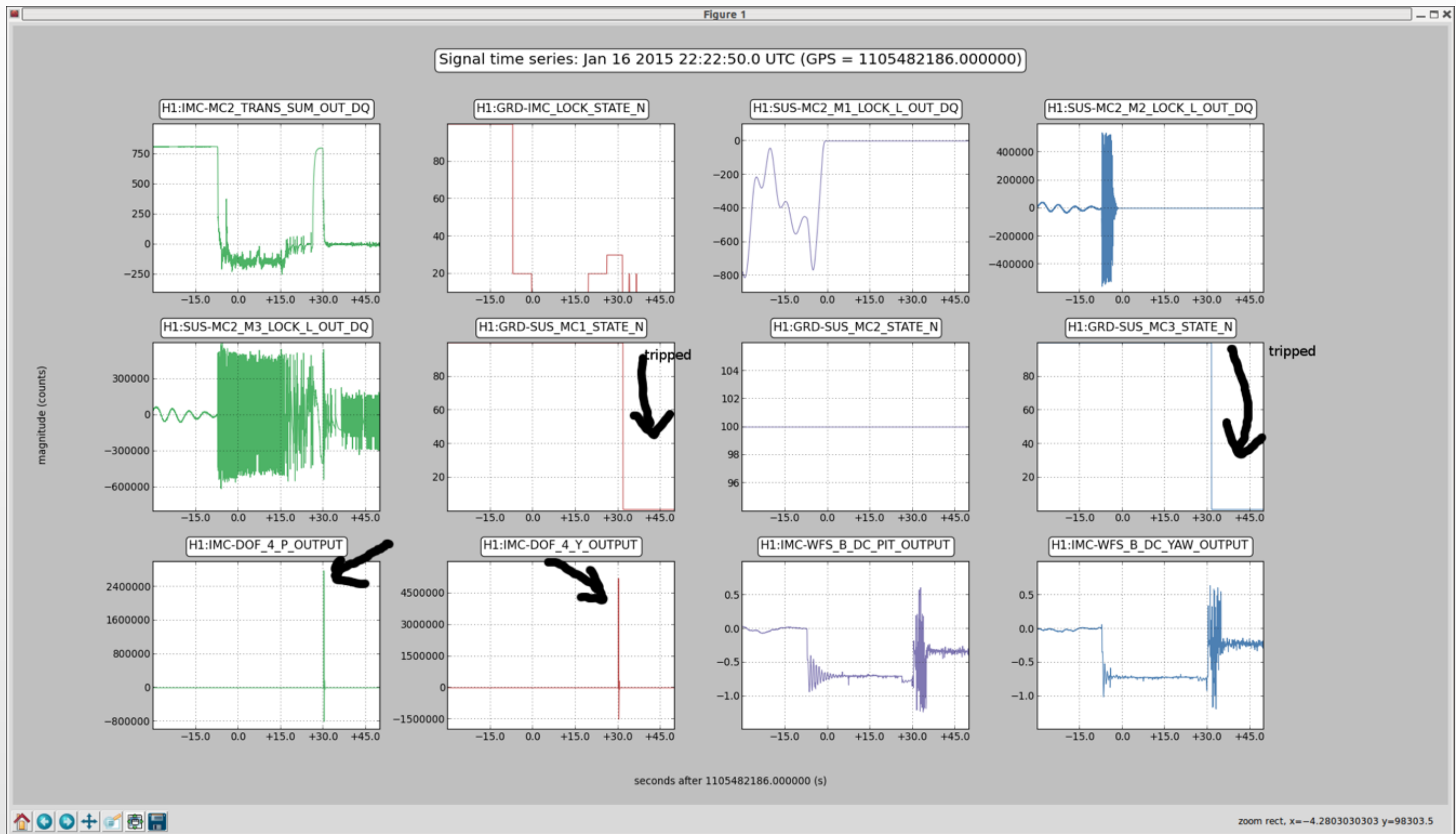
山本尚弘

◻ IMCのアンロック

ここ数日IMCがlockしない、MC1, MC3がトリップする
というのが問題になっていた。 -> aLOG 16128

IMCのトリップ

アンロックイベントの原因調査 aLOG 16129

H1 ISC   Link 🖨

evan.hall@LIGO.ORG - posted 21:03, Friday 16 January 2015 - last comment - 09:45, Saturday 17 January 2015(16129)

Bad IMC, bad COMM PLL

Alexa, Sheila, Kiwamu, Evan

Tonight we hoped to proceed further with the full locking procedure.

Unforunately, we have been stymied by repeated MC1/MC3 trips described in LHO#16128, and frequent unlocking of the modecleaner.

Eventually we noticed that some of these unlocking events were correlated with our attempts to lock ALS COMM. Sheila went out to check the IMC PDH loop, but found it is healthy, with a 28 kHz UGF with 40 degrees of phase.

Next, we noticed that even when the IMC stayed locked, ALS COMM would not lock. Sheila went out into the LVEA to check the health of COMM, and found that the PLL was not even locking (despite the digital system reporting that it was locked). Eventually, we shifted over the COMM signals from the COMM PFD to the DIFF PFD, and we were able to get COMM locked. We thought this meant that the COMM PFD was broken, but when we plugged the COMM signals back into the COMM PFD, we could get COMM to lock as well. Loose connection? Badly crimped cable? Unclear.

The following UTC times give some MC1/MC3 trips:

- 2015-01-16 22:24:00
- 2015-01-17 04:33:00
- 2015-01-17 04:46:00

Comments related to this report

alexan.staley@LIGO.ORG - 09:45, Saturday 17 January 2015 (16131)   Link

We also caused HAM2 HEPI to trip several times. I had to adjust PR3 alignment to get the COMM and DIFF beatnotes back to a nominal value. These new alignment positions have not been saved yet.

ALS: arm length stabilization system
COMM:
DIFF:
LVEA: Laser and Vacuum Equipment Area
PDH: Pound-Drever-Hall
PFD:
PLL:

アンロックイベントの原因調査 aLOG 16132

H1 PSL (IOO, ISC, PSL)   Link
sheila.dwyer@LIGO.ORG - posted 20:17, Saturday 17 January 2015 - last comment - 21:05, Tuesday 20 January 2015(16132)
PSL Noise eater oscillation

Alexa, Evan, Dan, Sheila

We have been having intermittent problems for the last two or three days. This evening we traced the problems we've been having with ALS COMM (alog 16129) to an oscillation of the PSL noise eater. The tell tale symptom was amplitude noise at around 900 kHz on the PSL light. We don't know of a good indicator of this problem from the control room.

We do not know if this was the cause of our mode cleaner lock losses over the last few days (alog 16128), or to tripping of MC1+MC3 suspensions and HAM2 ISI.

After I toggled the noise eater switch the ISS first loop was unable to lock. For now we have turned it off.

We had the outputs held on the IMC WFS DOF4 from late last night until 8 pm today. We didn't see any trips of MC1+MC3 today. Now we have turned DOF4 back on.

ALS COMMで起こっていた問題はPSLのノイズイータの発振が原因だった

この問題をモニタするのに

Noise Eater Mon, RF Monなどがあるよと言ったコメントがついていた

複数チャンネルで見えたイベント

IMCのアンロックについて

・H1:IMC-MC2_TRANS_SUM_OUT_DQ

・H1:GRD_IMC_LOCK_STATE_N

でアンロックが見えたとき

・H1:SUS_MC2_M3_LOCK_L_OUT_DQ

がサチっている

(2ページ目)

MC1/3のトリップについて

・H1:GRD_SUS_MC1_STATE_N

・H1:GRD-SUS_MC3_STATE_N

がトリップしたとき

・H1:IMC_DOF_4_P_OUTPUT

・H1:IMC-DOF_4_Y_OUTPUT

にバーストが乗っている

(3ページ目)