40m to-do list

13 Aug 2014

LSC modelling

With measured arm losses, when do we start to see REFL DC dip? At what arm buildup powers?

Include new AO path TFs into CM model
Look at possibilities for engaging AO path

ALS

Check noise spectra. Still okay after everyone's touching? Make template and reference spectra.

PSL SHG alignment tweak and check

Balance ALS input matrix. Lock ALS comm/diff, drive MC frequency, set coefficients so no signal in diff.

Balance ETMs. Lock ALS diff, shake ETMs, adjust output matrix so they cancel.

Set ALS control signal limits to about factor 5 larger than amount needed to hold lock. This should reduce the size of kick to mirrors at lock loss.

X green mode matching

X green ASS tune-up for new telescope

Y green remote PZT install

Misc

Check mode hopping temps for PSL, Aux lasers

Should noise eaters be on for aux lasers? Are they already? Will this solve mystery 800MHz noise on Y beat PD?

Confirm arm loss measurement

Optical levers

PRM loop tune-up: Minimize motion in PRMI case, minimize fluctuations of POP 22/110 power

Spot size check on all QPDs - are the spots reasonable?

How to increase the range for ETMY?

ASC

Wire ASC model so POP QPD signal can go to ETMs.

Lock single arms, shake test masses, see effect at POP QPD to infer Gouy phase. Check with Garbiele's model, and move QPD to location where PRM effect is minimal.

POP 22 razor blade test for yaw ASC

MC / FSS

Look at boards to compare with drawings - why doesn't model match measurement?

Where is the 1 MHz bump coming from? Get rid of it.

What is FSS mixer lowpass? Remove and replace if same as MC demos board.

Maybe remove z @ 70 kHz and p @ 140 kHz which are flattening out MC TF.

Check response of MC REFL PD

Soon - within 2 days

Pretty soon - within 1 week

When time - within 1 month

If time - within 1 year