OSURC Nightlog 20211125 UT

Observer*: Olga Kuhn
Lead Partner Observer*: Patrick Vallely (OSU), Najmeh Emami (UM)
Other Partner Observers*:
Special Assistants*: sleeping
Telescope Operator: Steve Allanson (LBT)
*** = from home**

Plan:

The plan was to start with MODS and then to switch to PEPSI. However the weather put an early end to that and so, instead, the night was used to obtain all of the calibrations for the MODS and LUCI programs, with the exception of LUCI darks.

Summary:

Snow on the dome prevented opening, although the humidity also would have kept us closed - it was 99.9% all night. We obtained all of the necessary MODS and LUCI calibrations, and a round of 25 LBCB+LBCR biases.

I checked the field stop alignment for both LUCIs and tweaked it by just a few pixels for LUCI2 before obtaining the calibrations. Afterwards I checked the pupil alignment. I could barely get enough counts with the usual settings and only verified that for LUCI1 it was very close before calling it a night. I did not move anything based on these images.

Issues:

There were several times when the MODS data transfer stalled, a comm glitch which caused the mods2 blue channel to hang and an oddity with the exposure times written to the headers of the first set of mods1 biases. I rebooted both MODS1 & MODS2 computers.

I had two instances where my x2go sessions froze up - once on obs5 and another time on robs.

Weather:

There was snow last night and on and off during the day. 30 minutes before sunset, the summit is socked in. At 16:47 MST, wind speeds ~7 m/s and temperature -2 C. The humidity was 99.9% all night.

Preparations:

luci[1|2].20211125.0NNN.fits
mods[1|2][b|r].20211125.NNNN.fits
lbc[b|r].20211125.HHMMSS.fits

MODS Calibrations Needed:

dual grating slitflats: bin 11 & bin 12
1" slitflats, dual: bin 11 & bin 12
0.8" slitflats, dual: bin12
1.2" slitflats, dual: bin 11
5" slitflats, dual: bin 11
comps, dual: bin 11
biases: 8K x 3K: bin 11 & bin 12
biases: 1K (in case needed for acq images)

LUCI Calibrations Needed:

Closed-dome imaging flats for UVa_nirjets (check whether scripts use the latest library, yes they do)
UVa_BCD_LUCI spectroscopic flats + arcs (1" G200 zJ)
Darks for both UVa_nirjets & UVa_BCD_LUCI programs.

NOTES:

ND_preCV target ztf2006 has a V=10 mag star 1 arcmin away - it would be good to use the pointing mask with a 40" square to block it. At PA=130, the star is above the target and near the center of the detector - potentially saturation effects may affect many columns below and on either side of the star. For PA=270, the star will be in the lower right quadrant - and saturation

effects should not cause problems since the spectra will be in the upper half. Still the pointing mask could help.

UM Nova - Mark Wagner indicated to me (OPK) that the most up-to-date script set is under the lbto account (*~lbto/Service_Observing/2021B_D_E/MODS/RMWagner_M31_Nova*) and we talked about the acquisition last night. The target has faded to ~22nd mag and so the latest acquisition script uses a PA which has both the target & an r=18.12 field star that is 41.75" to the N in the slit. We should use *modsAlign -l* to select the position along the slit where we want the field star to go (1K x 1K acq):
Y= 956.4 pix on MODS1 Red and
Y= 929.2 pix on MODS2 Red
and centroid on the star.
This should move the target to the usual position on the slit given by *-y 11* (Y=617 MODS1R) or *-y 9* (Y=590 MODS2R).

Overview (times are given in UT):

04:29 Starting with MODS calibrations

MODS Calibrations

Calibration	m1b	m1r	m2b	m2r
bias8K	3-7	3-7	3-7	3-7
bias 8K bin12	8-12	8-12	8-12	8-12
dual grating comps	13-15	13-15	13-15	13-15
dual grating pixflats	16-20 21-25	16-20	16-20 21-25	16-20
dual grating pixflats bin 12	26-30 31-35	21-25	26-30 31-35	21-25
0.8" slitflats bin 12	36-38 39-41	26-28 29-31	36-38 39-41	26-28 29-31
1" slitflats bin 12	42-44 45-47	32-34 35-37	42-44 45-47	32-34 35-37
1" slitflats	48-50	38-40	48-50	38-40

	51-53	41-43	51-53	41-43
1.2" slitflats	54-56 57-59	44-46 47-49	54-56 57-59	44-46 47-49
5" slitflats	60-62 63-65	50-52	60-62 63-65	50-52
bias 1K	66-70	53-57	66-70	53-57

LUCI Calibrations:

		L1	L2
UVa_nirjets	K+K	26-30 31-35	5-9 10-14
	J+H	36-40 41-45	15-19 20-24
	BrG+H2	46-50 51-55	25-29 30-34
	PaB+FeII	56-60 61-65	35-39 40-44
UVa_BCD_LUCI	flats: lamp off lamp on	66-70 71-72	45-49 50-54
	arcs: off Ne ON off Ar ON	76-77 off 78-79 Ne ON 80-81 off 82-83 Ar ON	55-56 57-58 59-60 61-62

LBC Biases:

07:59 I started a series of 25 LBC biases. Note that the bias level on chip2 LBCR is ~200 ADU. I have noticed that it is sometimes as low as 200, although it should be around 300 ADU like the other chips. It seems to vary more than for the other chips.

Notes:

04:42 mods1: red fitsflush needed

04:42 mods2: hung on "starting blue ccd exposure 4 of 5.."
021-11-25T04:34:45.168424 M2.BC>MC2 ERROR: NEXT2.BC Didn't understand next2.BC estatus ?
2021-11-25T04:34:49.427391 M2.CB>MC2 WARNING: FITS file '/lhome/data/mods2b.20211125.0005.fits' already exists, writing as '/lhome/data/210903M8.1tn.fits' instead

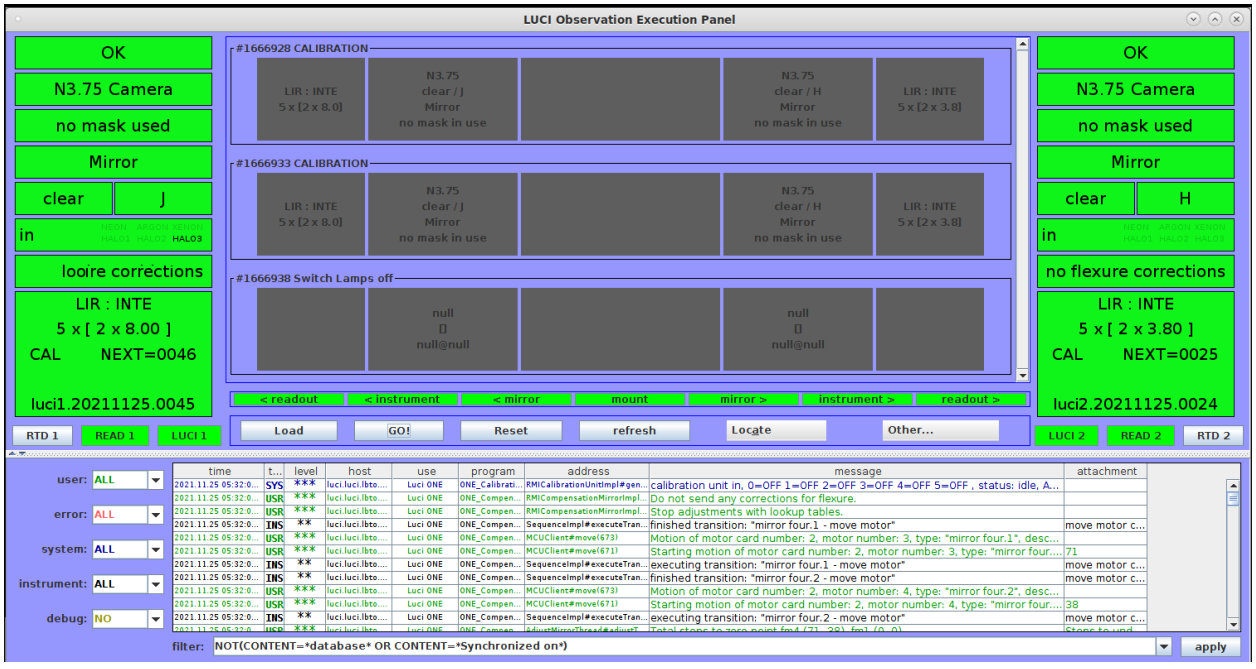
04:51 Issued "blue expdone" which took the 5th exposure (but skipped the 4th). Took the final one through the gui.

Starting LUCI calibrations:

05:16 I checked the field alignment and tweaked it for LUCI2 using the AFC tab. (I did not check the pupil alignment, though that should not need to be done so often).
Note: Dave Thompson aligned pupil & field stop on Nov 7. He found that the pupil was well-aligned on L2 but just needed a bit of adjustment on L1. It may be worth re-aligning or at least checking the alignment before we observe - and then taking another set of calibrations.

05:24 mods2: red fitsflush needed

05:39 The observation execution panel lags or just got stuck. The J+H imaging flat script ended and refreshing the IMGUI shows the correct status: flex comp off and lamp off, but the OEP shows that Halo3 is on and initially showed "lookup table" although it later was partially overwritten by "no flexure corrections" (see screenshow below). Restarted the OEP 05:45



06:15 LUCI2 mos error in moving from "no mask" to 1" slit. The error occurred when trying to get the 1" slitmask from storage -- Dave Thompson helped us recover.

06:39 Happened a 2nd time that the Observing Execution Panel did not show the true configuration. Again for LUCI1. It says the lookup table is on (but it is off - the script ended) and that the Ne lamp is on (but it is off). I tried to resent the config from the IMGUI (reset, submit) and this caused the lookup table to be partially overwritten by "no flexure corrections".
06:42 "x" the OEP and run "luci_observer" to get a new one with correct info now..

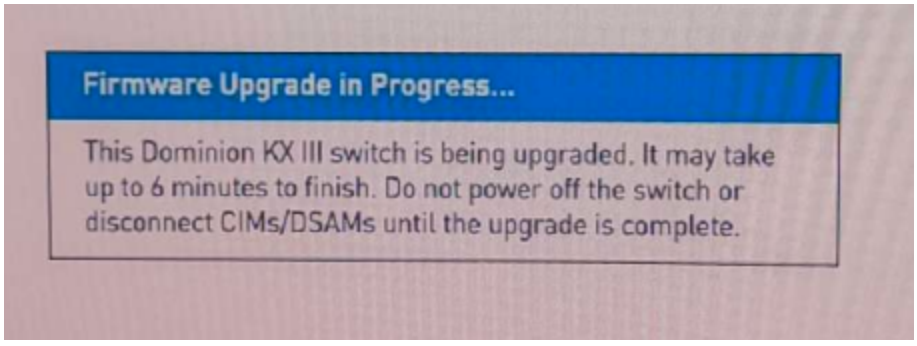
06:45 Done with LUCI cals for now. I will check the pupil & FS alignment later. Darks need to wait until after the LUCIs have been idle for a few hours.

07:02 mods1: blue fitsflush

07:30 Noticed that all mods1 biases, blue and red, have exptime = 86400.0. Only tonight, not earlier. The last time MODS was used was 20211119 UT. The 1K biases have the correct exptime.

08:20 We've had more than the usual comm glitches or data transfer glitches, and the odd exptimes for biases at the start. I'm going to reboot the MODS1 & MODS2 machines.

~08:30 MODS APC http://192.168.52.38 reports that someone is currently logged in. (Odd message, given that whenever I use the APC, I'm automatically logged out every 5 minutes or so.)
Also, Steve could not access the raritan from the computer room because there was a firmare update in progress. However, I could login and use it from a chrome browser on my laptop.



09:30 Both MODs are back up and running. Steve booted them in the order (DOS PCs and then modsNdata) although I noticed that neither M1.BC nor M2.BC would fully boot until modsNdata was turned back on. Even then, M2.BC needed a "cntl-alt-del" from the raritan before the caliban would start.

09:40 Steve is reconfiguring to the LBCs so I can collect some closed-dome engineering data. Done with calibraitons, but I will check and possibly tweak the pupil & field stop alignment this morning.

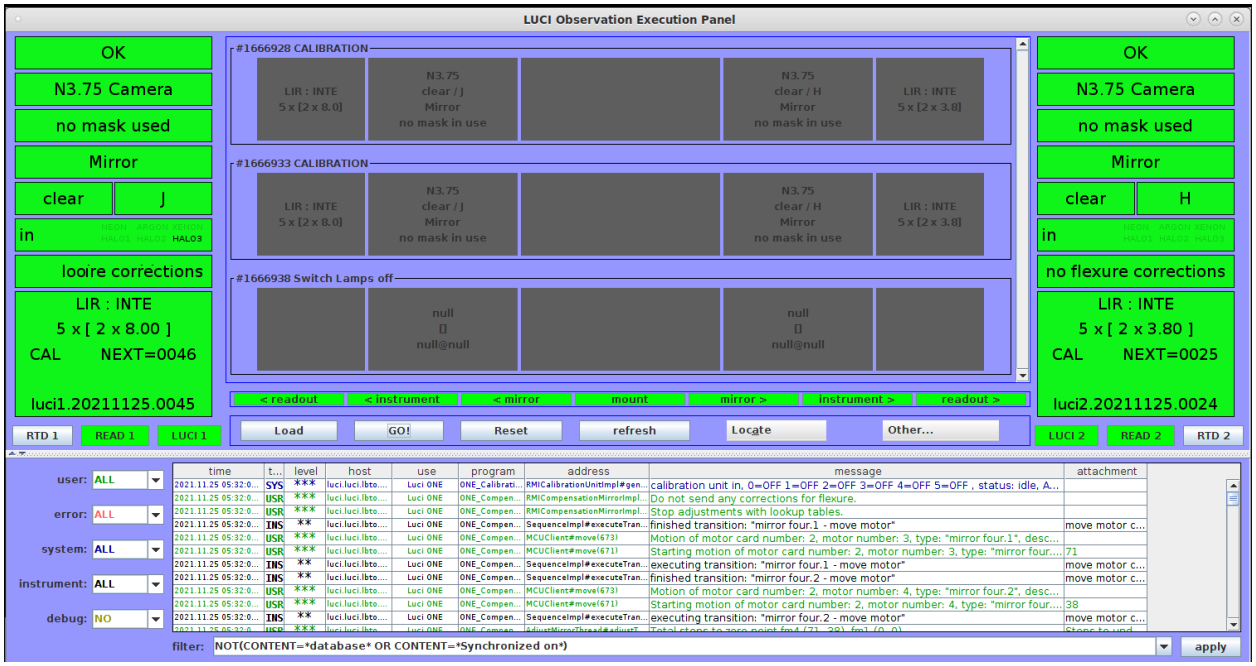
Obtained a series of images pairs with count levels from ~100 to 30k to try to use for measuring the gain. Terrible gradient, but within small patches may be OK. Used the lower chamber footlights because the lower floods are too bright.

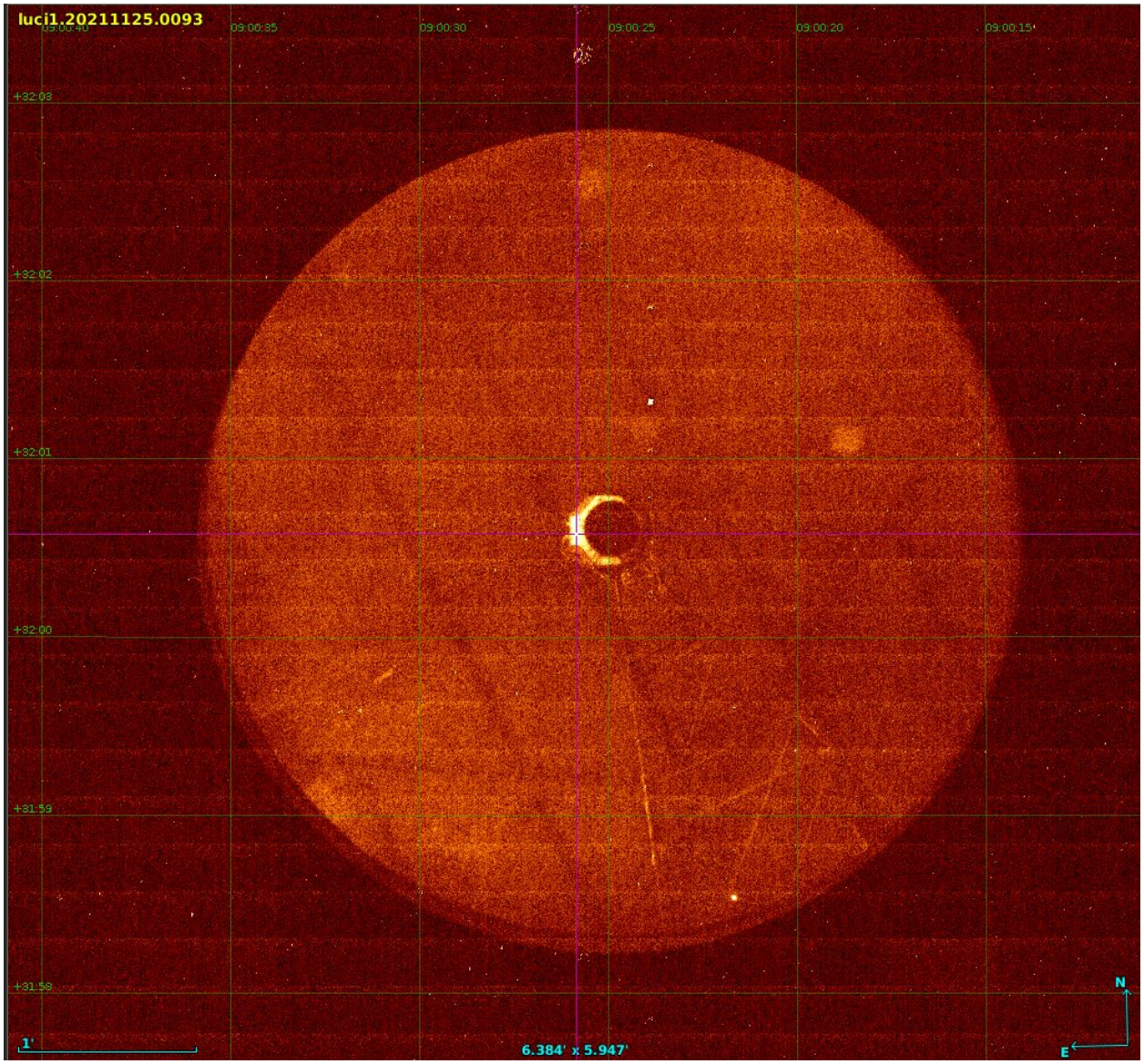
11:48 Steve is reconfiguring to LUC11+LUCI2

Shell is set, mirrors collimated, lights off

12:17 LUCI1 first. robs froze up. I had just stuck a few GUIs to all workspaces. I killed a lot of ds9s which seemed to help. I can now type in terminal windows, but I still cannot change workspaces. I suspended and re-entered my x2go session to robs - that did not help. There are a few messages WARNING about kde session (using agent instead), but I am using MATE.

Terminated my x2go session and restarted it on robs.





Why are the counts so low? 6 times longer than usual with full dome lights gives the above. PVlens + z (J was worse), 10s x 6 integrated.

The pupil images were not well-illuminated with the usual settings - maybe some daylight entering the dome had helped in the past. Or maybe something was not set up correctly, although we were configured for the LUCIs, they were authorized, and the mirrors were colliamted. The plug and screws in the adaptive secondary, used as fiducials, were not visible in a 10s x 6 exposure, 6 times longer than usually needed.

Based on the images L1 89 and 91 (or 92 at z) and L2 65 and 66, for L1, the pupil looks pretty well aligned and the field stop as well. On L2, the pupil is almost invisible but the field stop looks fine. I did not move anything.

ALTA predictions

LBTplot

The SX (black) and DX (green) guide star FWHM and flux are plotted below.