OSURC Nightlog 20220620 UT

Observer*: Olga Kuhn
Lead Partner Observer*: Mark Whittle (UVa)
AO Operator*: Juan Carlos Guerra
Telescope Operator: Josh Williams
*** = from home**

Plan:

The plan is the same as last night, which was lost to weather:
Start with PEPSI, to observe the VATT source in twilight , 2 OSU sources and then uSco plus the associated calibration star. Then, switch to the MODS, given the cloud cover, to get the bright OSU_ASASSN targets and finally to LUCI for the AO program and ND program.

Summary:

We opened late (1:45 min after 12-deg twilight) due to high humidity and clouds. We attempted the UM Nova, but had an issue with the blue CD mechanism which required manual intervention and cost the observation and 1 hour of downtime.
While reconfiguring to MODS we had to close due to nearby lightning and we remained closed for another 1:15 min. When we opened just after 8 UT, we observed the OSU_ASASSN targets: ASASSN22hp (SN and with the PA, the diffuse galaxy fell within the slit as well); J180425; and J185136; as well as the spectrophotometric standard, BD+28 4211. The observation of J185136 was compromised by thick clouds - the guide star had disappeared for the duration of the 2nd of the 3 exposures.

Issues:

The Blue CD mechanism failed during the calibrations - abort, initialize resolved the problem (though the user interface crashed along the way). It failed again during the observation of HR5501 - this time it went into a limit and had to be recovered using the handpaddle. IT 8554.

Weather:

The observatory was under the edge of a N-S band of clouds moving north. There was variable cloudiness and some lightning.

Preparations:

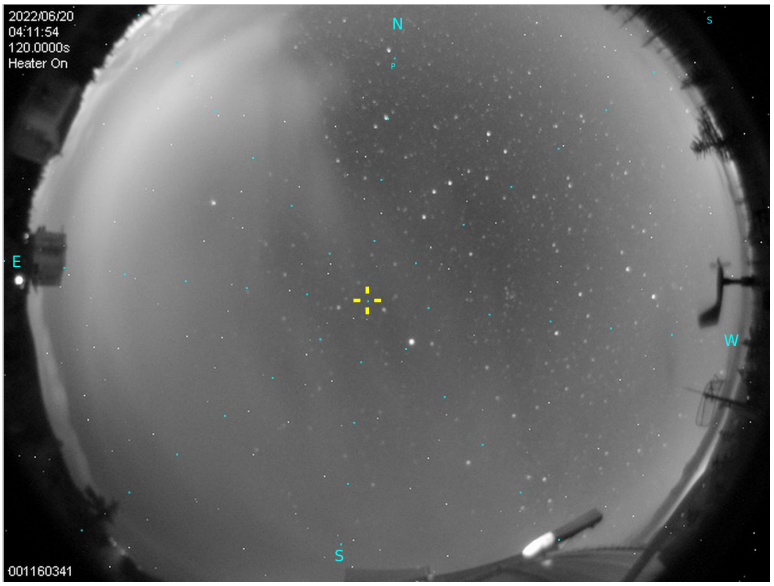
Both MODS are up and running and test images taken.
Both LUCIs are up and test images taken - I realigned the pupil and FS. The pupil alignment has been fairly stable from month to month, but this time adjustments were needed and made.
LBCs are up and running
PEPSI - is up and running.

mods[1,2][b,r].20220620.NNNN.fits
luci[1,2].20220620.NNNN.fits
lbc[b,r].20220620.hhmmss.fits

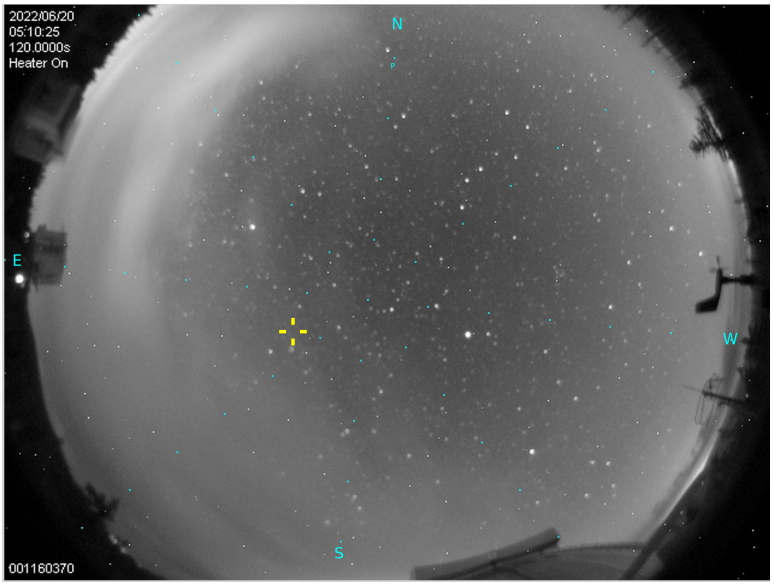
Overview (times are given in UT):

03:24 Obtained ThAr & traces calibrations for the OSU/UM programs. 300 mic fiber, all CDs. The Blue CD mechanism failed moving from CD2 to CD1, yet an exposure was taken - ignore pepsib.20220620.027. I repeated the pair CD1 & CD6 afterwards.

04:13 Waiting. Half of the sky is clear, but there are low clouds in the east.



05:16 We're going to open.



UM/uSco (not completed)

05:25 Josh is going to point and collimate near HR5501.

05:51 Blue CD failed in switch from 2->1. Abort/initialize did not work and a repeat try to initialize does not work. Silva is online and we tried to restart the SW, but it does not come up. Silva and Arto are looking into this. They've contacted Ilya - he has gotten the software back up and running, but the blue CD is stuck and it's uncertain how long it might take to resolve this. *(Ilya said later that the SW did not seem to come up because the blue CD was in the limit - the SW would have come up eventually, after the timeout period in talking to the blue CD)*

06:34 Reconfiguring for MODS.

06:41 During the reconfiguration, there have been a couple of lightning strikes nearby.
06:42 Josh is closing.

06:53 The blue CD mechanism went into the limit and needs to be moved with the handpaddle, as Jay did a couple of days ago. Jay did this, Ilya initialized it and moved it - it's recovered for now.

08:05 Opening the enclosure

Editing the PA for ASASSN22hp - this requires a change of guide star, so we selected a new one with R=13.79.

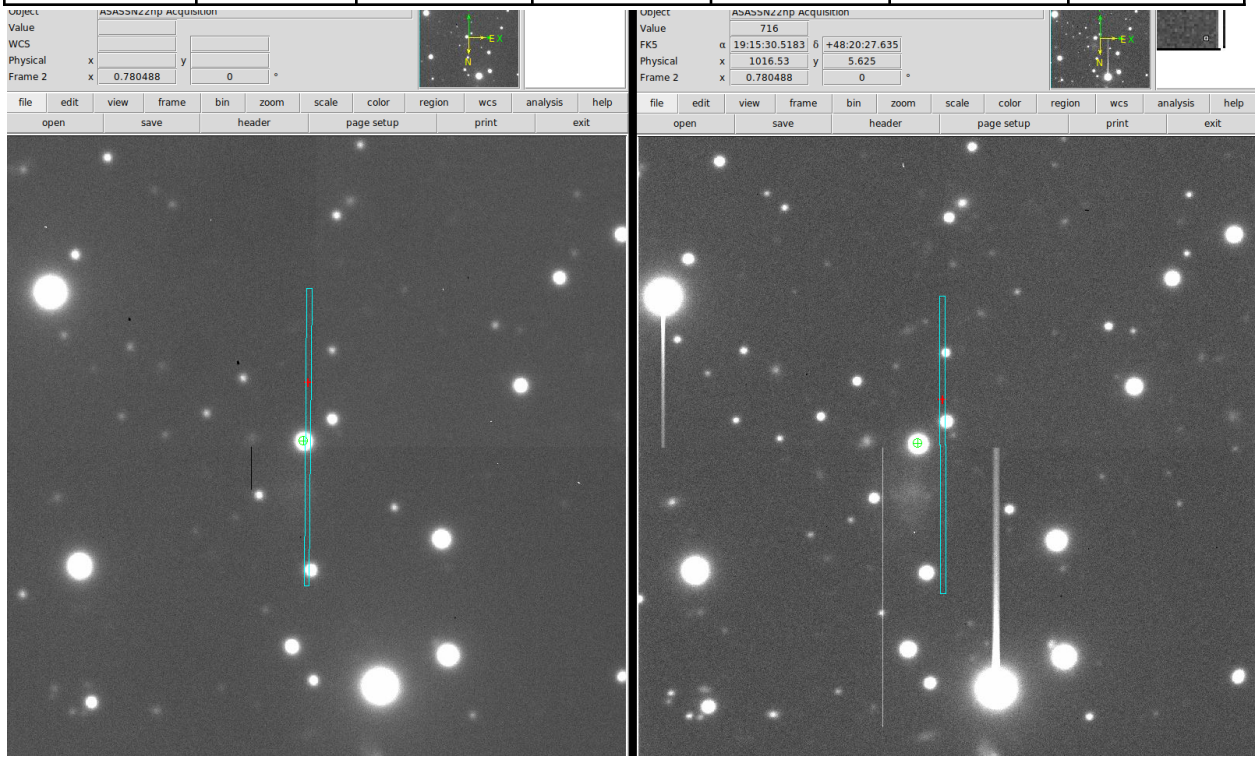
08:11 Josh is sending the pointing preset.

OSU_ASASSN/ASASSN22hp

08:21 acqBinoMODS ASASSN22hp_edit.acq

m1r 1 & 2 → offsetxy 1.045 11.710 rel → 3, dx = -0.18" → 4
m2r (20220619) 7 & 8 → offsetxy 5.002 8.764 rel → (920220620) 1, well-centered

UT	m1b	m1r	m2b	m2r	FWHM on SX/DX guiders	AM
08:38-09:44	1-5	5-9	1-5	2-6	1.32/1.04	1.038



With the slit PA=180, the diffuse galaxy falls within the slit. In the MODS2R spectra, we see what we think is H-alpha from the galaxy (redshift 0.0217). So we are going to skip the separate _host observation.

09:44 Finished

BD+28 4211

09:44 acqBinoMODS bd284211.acq

m1r 10 → 11 →12, looks ok
m2r 7 → 8 → 9, look ok

execBinoMODS bd284211_dualgrating.obs

UT	m1b	m1r	m2b	m2r	FWHM	AM
until-10:05	6-8	13-15	6-8	10-12	1.03/1.16	1.04

OSU_ASASSN/J180425

We changed the PA from 70 to 75 deg

<~10:08 acqBinoMODS J180425_UT1200_edit.acq

m1r: 16 & 17 → offsetxy -0.809 11.585 rel
m2r: 13 & 14 → offsetxy 3.146 8.565 rel

<~10:20 execBinoMODS J180425.obs

UT	m1b	m1r	m2b	m2r	FWHM	AM
10:20	9-11	19-21	9-11	16-18	1.3/0.8	1.29

mods2r reaches about 42k counts - the other channels peak at lower count levels.
Only mods2b has WCS, though all channels should.

10:30 18 deg twilight

OSU_ASASSN/J185136

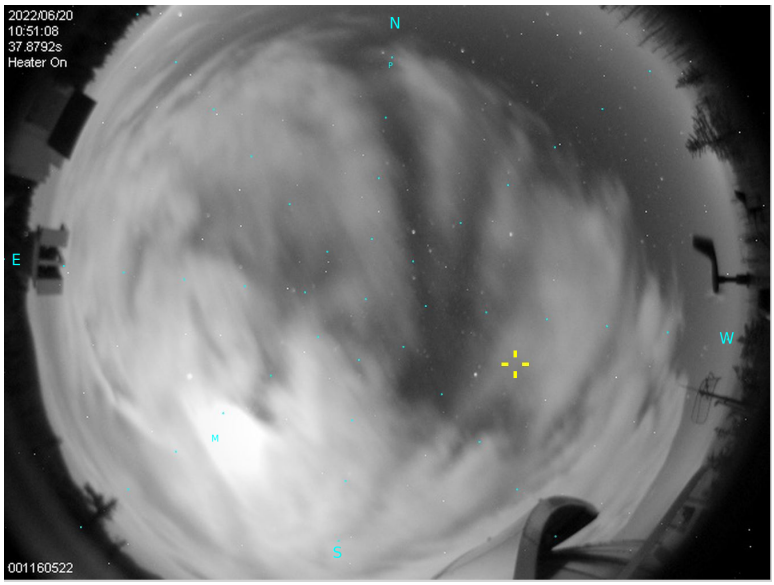
Changed the PA from 50 to 53.

10:43 acqBinoMODS J185136_UT1200_edit.acq
m1r 22-23 → offsetxy -0.027 13.785 rel →24
m2r

10:50 execBinoMODS J185136.obs

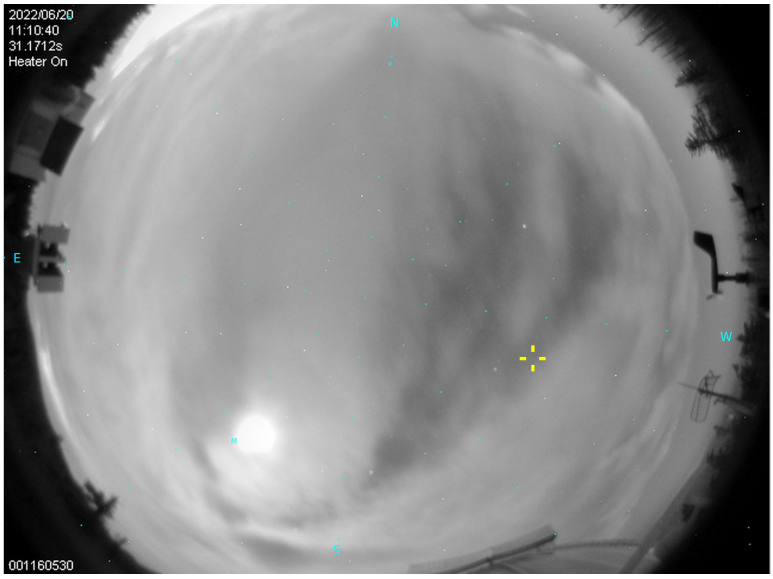
UT	m1b	m1r	m2b	m2r	FWHM	AM
10:50	12-14	25-27	12-14	22-24	1.27/0.87	1.297

10:56 As we started this observation the clouds started to fill the sky and the guide signal dropped. The latest allsky camera image (below).



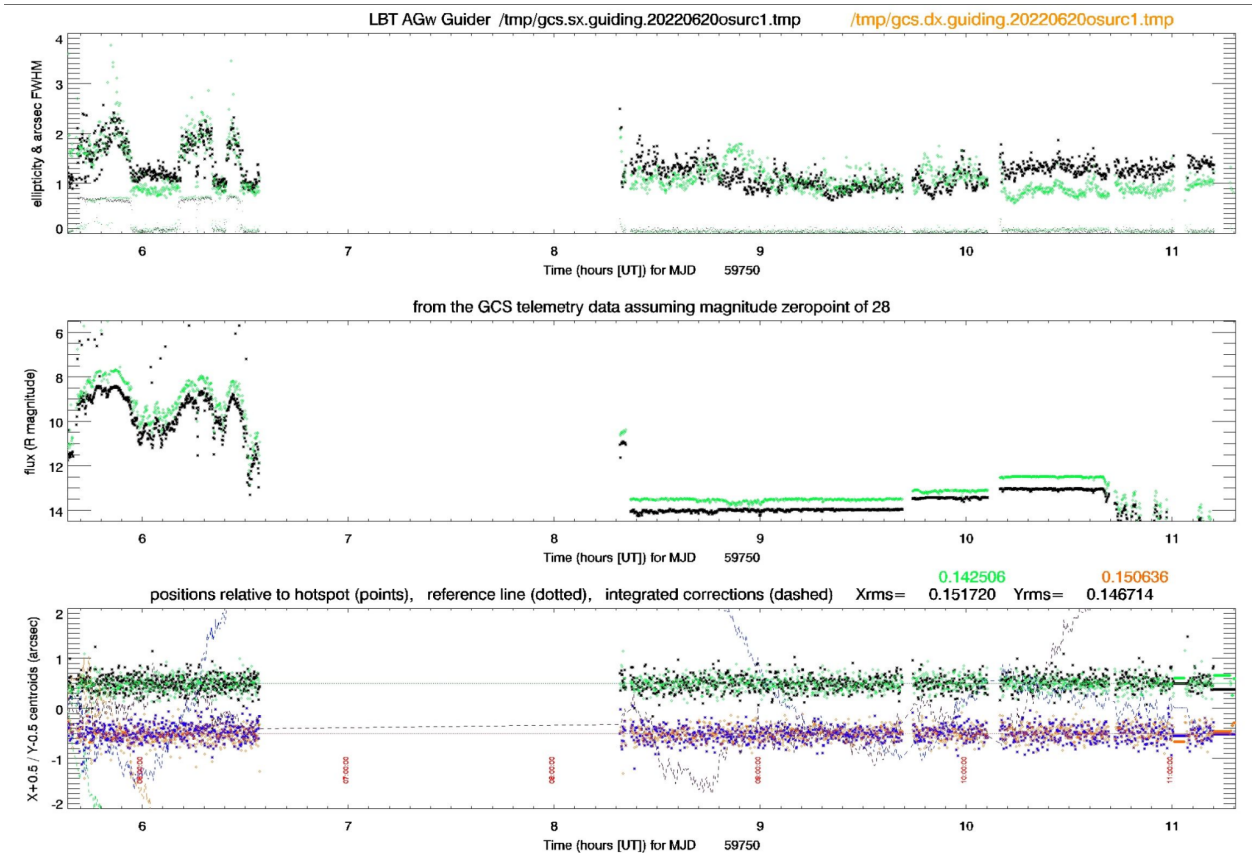
11:02 in the middle of the 2nd of 3 exposures, we lost the guide star.
11:05 at the start of the 3rd exposure, the star came back.

11:12 I restarted the series of 3, but just at this time, the guide star disappeared.



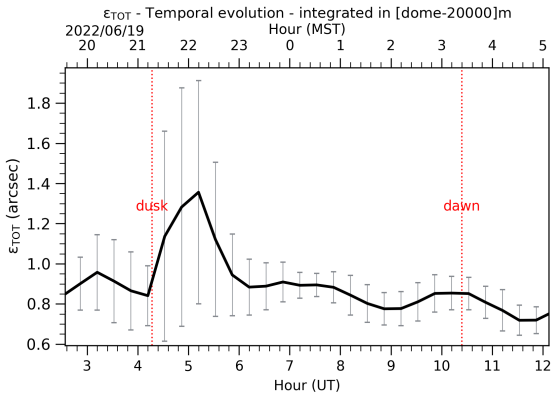
11:17 Ended the observation

LBTplot

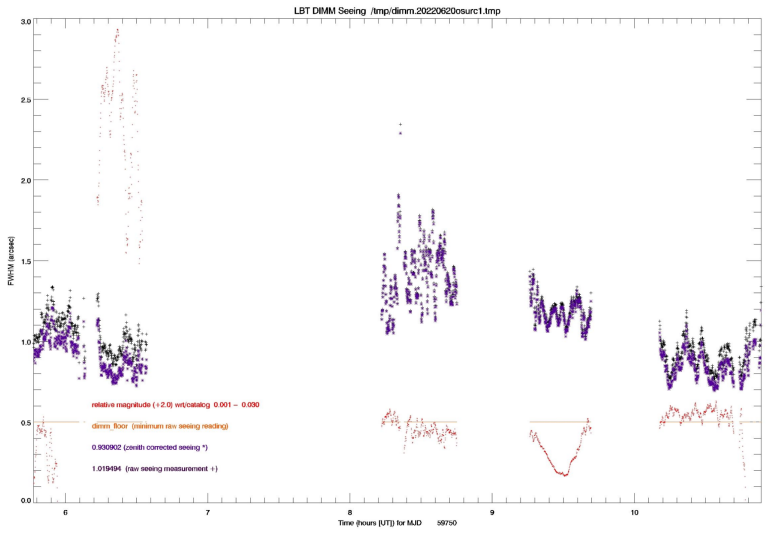


ALTA

The DIMM data were not overlaid on the predictions. The predicted seeing is below.
Last night there must have been dome seeing/turbulence - the guider FWHMs were sometimes quite different for SX and DX, depending on direction of the building with respect to the wind.



The DIMM:



Closed Dome Calibration

This is a cumulative list of the closed-dome calibrations taken during the nights 17-20 June UT.

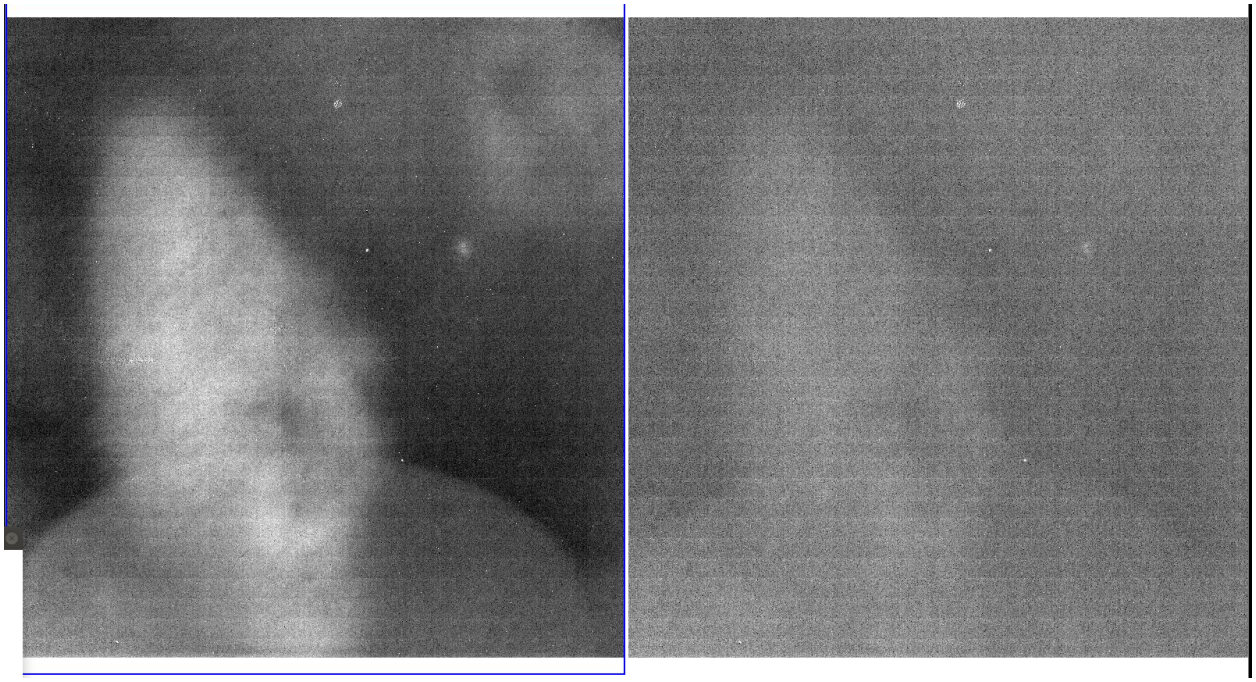
LUCI closed-dome cals

I aligned the N30 FS and took a few closed-dome flats with the N30 camera and FS, using the UVa_nirjets_AO script to provide a look. (I will repeat on the night that the target is observed so as to match the field position, since it may change a bit). There are some donuts on the flats, but I do not see these with the N3.75 camera or in all 3 filters: H2, BrG and Ks. Are they on the N30 camera and filters?

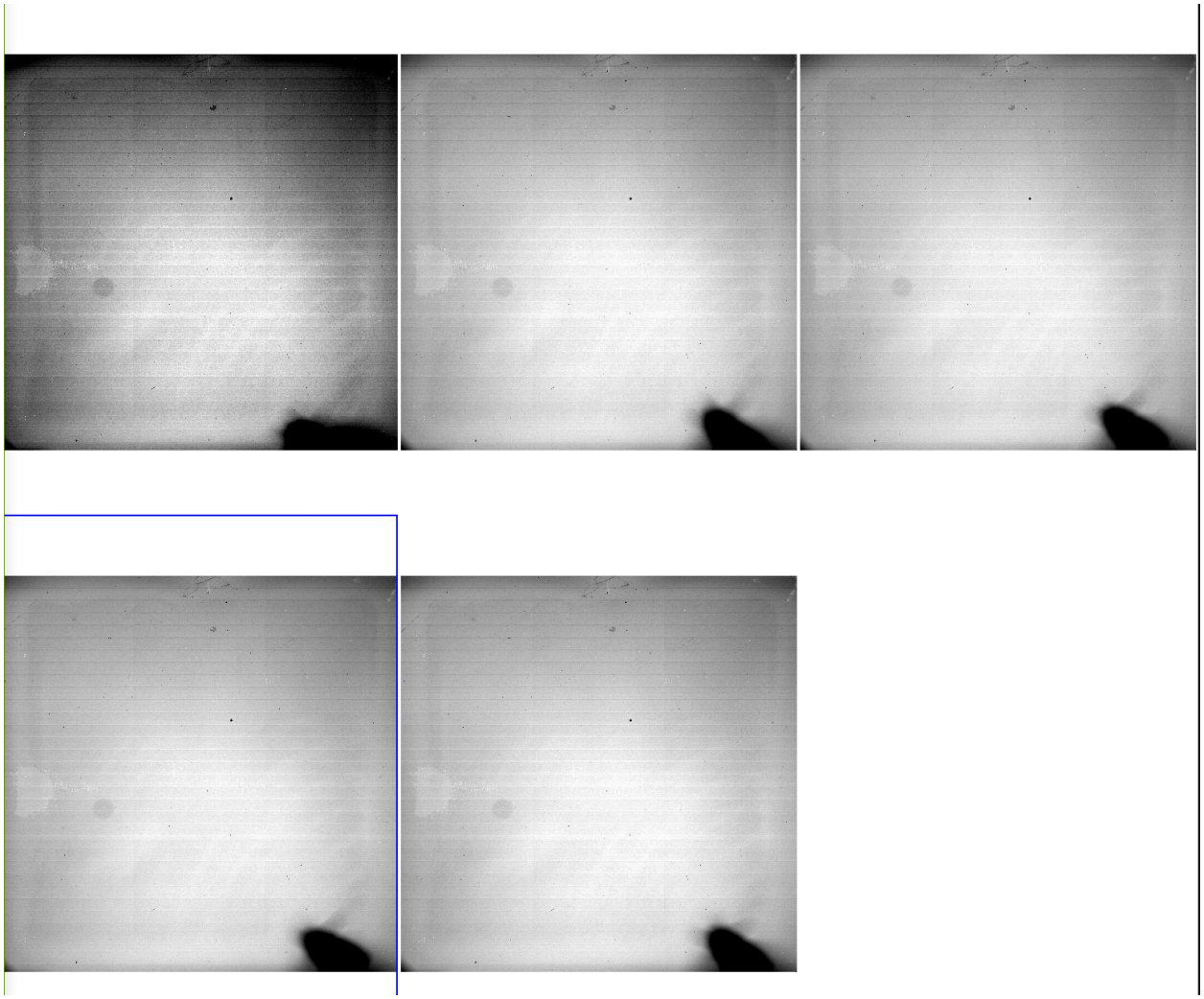
20220617 UT luci1.20220617.NNNN.fits	
Ks (N30)	5-9 lamp off 10-14 lamp on
BrG (N30)	15-19 lamp off 20-24 lamp on
H2 (N30)	25-29 lamp off 30-34 lamp on

20220619 UT luci[1,2].20220619.NNNN.fits				
Program	**Filters**	**L1**	**L2**	**Comments**
UVa_nirjets	K+K	50-54 55-59	15-19 20-24	very high counts
	J+H	~~60-64~~ ~~65-69~~	25-29 30-34	L1 J-band lamp off flats amplitude ~30 counts
	J+H	**75-79** **80-84**	**39-43** **44-48**	These look good. The L1 flats do not have this ghost-like persistence feature (shown above).
	K+K	**85-89** **90-94**	**49-53** **54-59**	With no lamp, counts 30k, with Halo3, 35k. 15 C in dome -

	J+H	**95-99** **100-104**	**60-64** **65-69**	Show the persistence.
	J+H	**105-109** **110-114**	**70-74** **75-79**	good, but in the bottom right of L1 lamp-on flats, something around the WFS stage is moving! (moth? see screenshot below)
	BrG+H2	**121-125** **126-130**	**84-88** **89-93**	
	PaB+FeII	**131-135** **136-140**	**94-98** **99-103**	
	J+H	**141-145** **146-150**	**104-108** **109-113**	
ND_J0053K	**G210 2.1mic** **0.75" slit**			



J-band lamp-off LUCI1 images taken immediately after K band, high count level (30-35k) flats. On the left luci1.20220619.0060 and on the right luci1.20220619.0064.fits



L1 J lamp-on flats 110-114 with the moving shadow at the bottom right - a moth?

LUCI darks

The nirjets_AO dark script was missing the 30s x 2 darks, so I added these. I used savemode=cube, like the data. I will add a set of 30x x 2 darks to those for the SL program for comparison. The save mode of the darks should not need to match the data.

program	L1	L2	DIT	NDIT	readmode	savemode
UVa_nirjets and UVa_nirjets_AO	5-9,10-14	56-60,61-65	2.51	20	LIR	integrated
	15-19	66-70	30	2	LIR	integrated
	20-24	71-75	10	6	LIR	integrated

UVa_nirjets_AO	25-29		2.5	20	LIR	cube
	30-34		2	30	LIR	cube
ND_j0053K	35-43	76-84	60	1	MER	norm
	44-52	85-93	30	1	MER	norm
	53-67	94-108	5	3	LIR	norm
	68-72	109-113	5	3	LIR	integrated

LBC

20220318 UT:

Three sets of 25 biases taken at 03:19. These are mostly free of noise. In the second set, we had the following error and as a result only got about half as many LBCR as LBCB biases. But we repeated the series once more after that.

022/06/18 03:40:10.196644 W R ROTATOR timeout error on motion (maybe too large mechanical friction problem) [src/rotator/rotator.c:1777]
2022/06/18 03:40:10.326779 N R ROTATOR GOYA query:>CTRL_D< answer:>E0X0$<
2022/06/18 03:40:10.567384 W R ROTATOR actual position is 66.261 deg
2022/06/18 03:40:10.567427 W R ROTATOR failure [src/rotator/rotator.c:1123]

Reloading and replaying the OB resolved the problem.