

# LBT Observing Log for 2024 12 22 UT

Observers: Justin Rupert

Partner Observer: Peter Garnavich

Telescope Operator: Steve Allanson

## Plan:

We will run with MODS until the moon rises, then switch to LUCI.

## Summary:

Another productive night. Observed a good mix of programs with MODS, LUCI, and PEPSI PFU. Conditions were decent to excellent all night with just a little cirrus in the middle.

Completed:

PEPSI LOG:

<https://drive.google.com/file/d/1UnfCrAS5-t5e1ExtZwPGrdPRKQUSxGKc/view?usp=sharing>

MODS:

ND Lamost

ND V247

OSU XMD Mrk 5

G191b2b Flux cal

LUCI

UVa BCD J0833 + BDp43 Telluric

OSU Scat 2023ufx

PEPSI

UVa Multistar TIC 367448265

UVa Multistar TIC 336882813

UVa Multistar HP 38979 (Telluric)

UVa Multistar HD 65583 (RV)

OSU RRL GDR3 5696489242945539072

OSU RRL GDR3 1093741326331025664

OSU RRL GDR3 3095931247229836800

OSU BHB GDR3 832384629268579584

OSU BHB GDR3 5721905003970002688

OSU BHB GDR3 665777212860770560

OSU BHB GDR3 3089372385493635584

OSU BHB GDR3 1098324086498919552

OSU BHB GDR3 307297983535166630  
OSU BHB GDR3 3078858924024876032  
OSU BHB GDR3 601887753265466496  
OSU BHB GDR3 601184959177696896  
OSU BHB GDR3 679297117073493760

#### ND

[Lamost-10 \(UT 01:14-04:00\)](#)  
[V247-180 \(UT 04:00-05:46\)](#)

#### OSU

[XMD\\_Mrk5\\_UT0600 \(UT 05:46-07:10\)](#)

#### Standard Star

[G191B2B \(UT 07:10-07:33\)](#)

#### Reconfig to LUCI2 (7:33-7:50)

#### UVa

[BCD\\_J0833 \(UT 07:50-08:36\)](#)  
[BCD\\_BDp43d1836 \(UT 08:36-08:46\)](#)

#### OSU

[SCAT\\_2023ufx \(UT 08:46-09:56\)](#)  
[Reconfigure to PEPSI \(9:57-10:10\)](#)

#### UVa

[Multistar - TIC 367448265 \(UT 10:11-10:15\)](#)  
[Multistar - TIC 336882813 \(UT 10:16-10:25\)](#)  
[Multistar - HIP 38979 \(UT 10:25-10:32\)](#)  
[Multistar - HD 65583 \(UT 10:32-10:36\)](#)

#### OSU

[RRL - GDR3 56964... \(UT 10:41-10:50\)](#)  
[BHB - GDR3 83238...\(UT 10:50-11:02\)](#)  
[BHB - GDR3 57219...\(UT 11:02-11:10\)](#)  
[BHB - GDR3 66577...\(UT 11:10-11:16\)](#)  
[BHB - GDR3 30893...\(UT 11:17-11:27\)](#)  
[BHB - GDR3 10983...\(UT 11:28-11:37\)](#)  
[BHB - GDR3 30729...\(UT 11:37-11:51\)](#)  
[RRL - GDR3 10937...\(UT 11:52-12:17\)](#)  
[RRL - GDR3 30959...\(UT 12:18-12:37\)](#)  
[BHB - GDR3 30788...\(UT 12:38-12:42\)](#)  
[BHB - GDR3 60188...\(UT 12:43-12:47\)](#)  
[BHB - GDR3 60118...\(UT 12:47-12:52\)](#)  
[BHB - GDR3 67929...\(UT 12:52-12:57\)](#)

[Reconfigure to LUCI2 for Skyflats \(12:47-13:19\)](#)

## Issues:

Peter had a little trouble logging onto and staying on the VPN. He eventually worked it out somehow.

Experienced multiple instances of delay between shutter closing and readout starting on mods2r. This was particularly annoying during the time series observations at the beginning of the night.

Had a lot of trouble with the hotspot guiding on DX during PEPSI observations. Eventually just turned it off as soon as the exposures started.

## Weather:

Subarcsecond seeing most of the night. Increased to just above 1.5" at the end of the night.

Skies were mostly clear with a brief period of thin, sparse cirrus in the middle of the night. Winds were relatively calm all night.

## Overview (times are given in UT):

23:45 Steve was running MODS SimSnap when I arrived.

23:53 Initializing LUCI2.

23:54 LUCI2 field stop alignment.

00:13 Opening.

00:25 The OSURC observer hasn't joined the Zoom yet. Steve will point and collimate on a middling target.

00:27 Pointing check. Still too bright.

00:34 Pointing check. Peter joined us a few minutes ago and has given us our first target.

00:43 Second pointing check.

00:47 Collimation check.

ND

## Lamost-10 (UT 01:14-04:00)

Mods1r: 3-41

Mods1b: 3-36

Mods2r: 3-36

Mods2b: 3-36

01:14 Preset

01:15 12-degree twilight.

01:24 Starting science. Seeing is 0.6" on SX guider, 0.7" on DX guider, 1" on DIMM.

01:45 18-degree twilight.

02:39 Seeing is 0.7" on both guiders, 1.1" on DIMM. Peter is having trouble connecting to the VPN. He was connected earlier and looking at data as it was being saved, but was booted from it. He has had mixed success trying to reconnect multiple times. Sometimes he connects and gets booted again. Sometimes he is unable to connect.

03:01 Seeing is 0.6" on both guiders, 1.3" on DIMM.

03:08 Had to command red expdone on mods2r after it hung upon completion of a readout. It has experienced a few delayed starts to its readout, so it is currently three images behind the others.

03:39 Seeing is 0.5" on SX guider, 0.6" on DX guider, 1" on DIMM.

03:42 blue fitsflush on mods2b. modsDisp was seven exposures behind.

03:46 Adding five more exposures to the mods1r channel while we wait for mods2r to finish its set of exposures.

03:57 We completed two of the five extra exposures on mods1r. We decided to cut off the final three exposures on mods2r.

## V247-180 (UT 04:00-05:46)

Mods1r: 42-61

Mods1b: 37-53

Mods2r: 37-56

Mods2b: 37-53

04:00 Preset

04:09 Starting science. Seeing is 0.5" on SX guider, 0.6" on DX guider, 0.9" on DIMM.

04:21 The following error message appeared in the modsDisp window:

MODS1B> mods1b.20241222.0037.fits OBJECT MGAB\_V247 Clear LS5x60x0.8 IN

\*\*\* ERROR: Cannot read FITS header of

Reason: IsADirectoryError(21, 'Is a directory')

MODS2B> mods2b.20241222.0038.fits OBJECT MGAB\_V247 Clear LS5x60x0.8 IN

This doesn't seem to be affecting operation, the exposures are still being saved and displayed, and there's nothing obvious to me that is wrong with the header of mods1b.0037 or mods2b.0038.

04:31 Seeing is 0.5" on both guiders, 0.9" on DIMM.

05:06 red fitsflush on mods2

05:28 Seeing is 0.5" on both guiders, 0.8" on DIMM.

## OSU

XMD\_Mrk5\_UT0600 (UT 05:46-07:10)

Mods1r: 62-68

Mods1b: 54-56

Mods2r: 57-62

Mods2b: 54-56

05:46 Preset.

05:58 Tweaking slit alignment on MODS1.

06:01 Starting science. Seeing is 0.6" on SX guider, 0.7" on DX guider and DIMM.

06:26 Seeing is 0.9" on both guiders, 0.8" on DIMM.

07:09 red expdone on mods2.

## Standard Star

G191B2B (UT 07:10-07:33)

Mods1r: 69-73

Mods1b: 57-59

Mods2r: 63-67

Mods2b: 57-59

07:10 Preset.

06:49 Very thin, sparse cirrus starting to roll by.

07:18 mods2r hung between shutter closing and reading out on both the field image and through-slit image during acquisition.

07:21 Starting science. Seeing is 0.6" on guiders, 0.8" on DIMM.

## Reconfig to LUCI2 (7:33-7:50)

07:33 **Reconfiguring to LUCI2.**

07:45 Pointing check.

07:47 Collimation check.

## UVa

### BCD\_J0833 (UT 07:50-08:36)

Luci2: 7-18

07:50 Preset.

07:59 Starting science. Seeing is 0.7" on DX guider, 1" on DIMM. Sparse, thin cirrus still passing through.

### BCD\_BDp43d1836 (UT 08:36-08:46)

Luci2: 19-23

08:36 Preset.

08:43 Starting science.

08:45 Seeing is 0.7" on DX guider. Sparse, thin cirrus still passing through.

## OSU

### SCAT\_2023ufx (UT 08:46-09:56)

Luci2: 24-50

08:46 Preset.

08:48 Starting science. Seeing is 0.7" on DX guider. Sparse, thin cirrus still passing through.

08:54 IQ check: 3pix x 3.97pix (0.5" in Y).

09:16 IQ check: 3.64pix x 3.77pix (0.4" in Y).

09:39 IQ check: 3.1pix x 3.24 pix (0.4" in Y). Sparse, thin cirrus still passing through.

Reconfigure to PEPSI (9:57-10:10)

09:57 **Reconfigure to PEPSI PFU.**

10:04 Pointing check.

10:09 Collimation check.

UVa

Multistar - TIC 367448265 (UT 10:11-10:15)

10:10 Preset. Oops, only SX was selected.

10:11 Resending preset.

10:14 Starting science. Seeing is 0.7" on both guiders, 0.8" on DIMM.

Multistar - TIC 336882813 (UT 10:16-10:25)

10:16 Preset

10:19 Starting science. Seeing is 0.6" on both guiders and DIMM.

Multistar - HIP 38979 (UT 10:25-10:32)

10:25 Preset. Missed on DX.

10:28 Resending preset.

10:30 Starting science. Seeing is 0.5" on SX guider, 0.7" on DX guider, 0.6" on DIMM.

Multistar - HD 65583 (UT 10:32-10:36)

10:32 Preset.

10:34 Starting science. Seeing is 0.4" on SX guider, 0.6" on DX guider.

## OSU

RRL - GDR3 56964... (UT 10:41-10:50)

10:41 Preset.

10:44 DX missed it. Steve is nudging it in.

10:47 Starting science. Seeing is 0.5" on both guiders and DIMM. Skies have cleared.

BHB - GDR3 83238...(UT 10:50-11:02)

10:50 Preset.

10:53 Missed it on DX. Resending preset.

10:56 Starting science. Seeing is 0.5" on SX guider, 0.6" on DX guider, 1" on DIMM.

BHB - GDR3 57219...(UT 11:02-11:10)

11:02 Preset.

11:07 Starting science. Seeing is 0.6" on both guiders, 0.4" on DIMM.

BHB - GDR3 66577...(UT 11:10-11:16)

11:10 Preset.

11:14 Starting science. Seeing is 0.4" on SX guider, 0.5" on DX guider, 0.7" on DIMM.

BHB - GDR3 30893...(UT 11:17-11:27)

11:17 Preset.

11:19 Starting science. Seeing is 0.5" on both guiders, 0.6" on DIMM.

11:24 DX hotspot moved target off fiber.

22/12/2024 04:24:03 iif dx: hotspot -15.7 52.0

BHB - GDR3 10983...(UT 11:28-11:37)

11:28 Preset.



11:32 Starting science. Seeing is 0.5" on SX guider, 0.6" on DX guider, 1.3" on DIMM.

BHB - GDR3 30729...(UT 11:37-11:51)

11:37 Preset.

11:40 Starting science. Seeing is 0.4" on SX guider, 0.5" on DX guider.

11:46 DX hotspot moved target off fiber.

22/12/2024 04:46:36 iif dx: hotspot -16.3 53.5

RRL - GDR3 10937...(UT 11:52-12:17)

11:52 Preset.

11:57 Starting science. Seeing is 0.5" on SX guider, 1.3" on DX guider (possibly higher due to a couple of nearby objects), 1.4" on DIMM.

12:00 DX hotspot moved target off fiber.

22/12/2024 05:00:08 iif dx: hotspot -22.4 73.3

RRL - GDR3 30959...(UT 12:18-12:37)

12:18 Preset.

12:21 Steve is increasing the WFS exp time.

12:23 Starting science, preemptively stopping hotspot guiding on DX (and will do so for the rest of the night). Seeing is 0.8" on SX guider, 0.7" on DX guider, 0.8" on DIMM.

BHB - GDR3 30788...(UT 12:38-12:42)

12:38 Preset.

12:40 Starting science. Seeing is 1.1" on SX guider, 1.2" on DX guider.

BHB - GDR3 60188...(UT 12:43-12:47)

12:43 Preset.

12:44 Starting science. Seeing is 1.3" on both guiders.

BHB - GDR3 60118...(UT 12:47-12:52)

12:47 Preset.

12:49 18-degree twilight. Starting science. Seeing is 1.1" on both guiders, 0.8" on DIMM.

BHB - GDR3 67929...(UT 12:52-12:57)

12:52 Preset.

12:54 Starting science. Seeing is 0.8" on SX guider, 0.9" on DX guider.

## Reconfigure to LUCI2 for Skyflats (12:47-13:19)

12:57 **Reconfiguring to LUCI2** for sky flats.

13:02 Preset to Blank11+51.

13:19 12-degree twilight.

13:50 Running H twilight flats.

13:58 Running K twilight flats.

13:59 Running J twilight flats. Too bright. Will run these tomorrow.

14:00 Closing.

14:03 Running PEPSI cals.

14:10 Running MODS bin12 arcs.

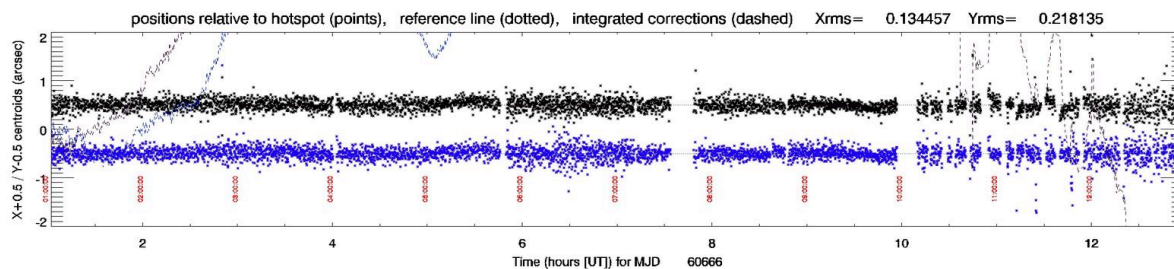
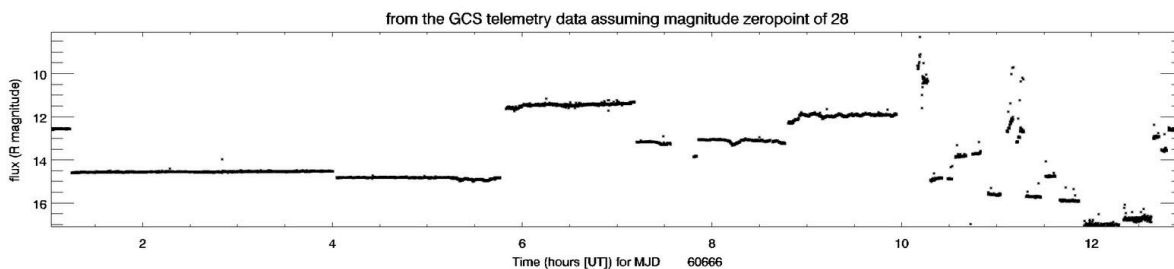
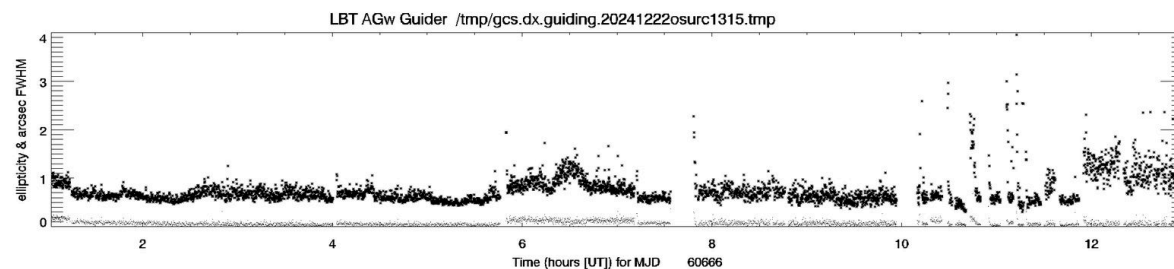
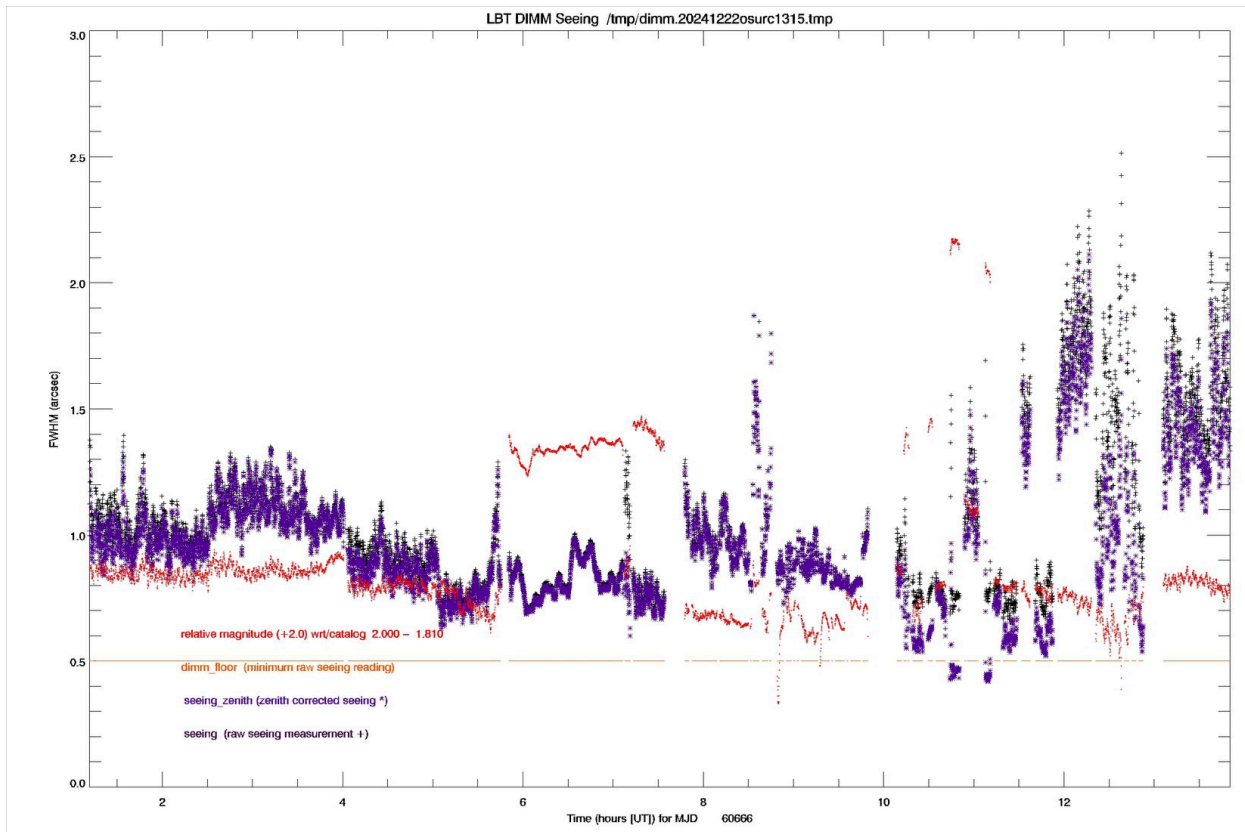
14:17 Running bin12 biases.

14:26 Running bin12, 0.8" slit flats.

14:40 Running bin12 pixel flats.

PEPSI Log:

<https://drive.google.com/file/d/1UnfCrAS5-t5e1ExtZwPGrdPRKQUSxGKc/view?usp=sharing>



Cals

MODS:

~~Arcs 1x2~~

Arcs 1x1

~~Bias 1x2~~

Bias 1x1

~~0.8" slit flats 1x2~~

~~pix flats 1x2~~

1" slit flats 1x1

pix flats 1x1

LUCI:

1", zJ, G200 Arcs+Flats

UVa\_BCD darks

OSU\_SCAT\_im flats (J, H, K)

OSU\_SCAT\_twilight flats (J, H, K)

OSU\_SCAT darks