LBT Observing Log for 2024 12 23 UT

Observers: Justin Rupert
Partner Observer: Mark Whittle
Telescope Operator: Steve Allanson

Plan:

We will start with PEPSI PFU the move to LUCI. Forecast is calling for cloudy skies tonight, so we'll see about switching to LUCI.
Plan:
UVa-Multistar: (select only those with *** for UT ~1:00

- TIC 2783 done
- TIC 3227 done
- TIC 4140 done
- TIC 2581 done
- TIC 3071 done
- TIC 5258 done
- HIP 104548 (Telluric) done

Down for clouds…
Returning…

- TIC 3674 (UT ~7:10) done
- TIC 3368 (UT 7:20) done

OSU Clusters:

- J03173 done
- J03354 done
- J03244 done
- J03165 done
- J03251 done
- J03274 done
- J03280 done
- J03365 done
- J03163 done
- J03185 done
- J03170 done cirrus, double exposure – OK
- J03154 done double exposure (but ~clear)
- J03200 done (~clear)
- J03314 not done
- J03381 Next —- too cloudy here
- J03284 Next+1 — too cloudy here
- J03203 not done

Down for clouds…

OSU RRL

56126 dec coordinates incorrect, asked PI to resend

56065 trying to work in clear area of sky…

56931

OSU BHB

2MASSJ05313920+4729318 done

2MASSJ06034274+0126562 done

Down for clouds for the rest of the night…

2MASSJ06205268+1215078 not done

2MASSJ06170689+2343487 not done

2MASSJ07004282-1226187 not done

Summary:

- Clusters - J0320+4653 (UT 03:30-03:37)
- ~~Clusters - J0331+4655 (UT 03:37-03:56)~~
- ~~Clusters - J0338+4836 (UT 03:56-04:04)~~

Weather Downtime (UT 03:56-07:06)

UVa

- TIC 367448265 (UT 07:06-07:18)
- Multistar - TIC 336882813 (UT 07:18-07:30)

OSU

- ~~Clusters - J0338+4836 (UT 07:30-07:33)~~
- RRL - GDR3 5612628838262556160 (UT 07:33-07:52)
- RRL - GDR3 5606573243611826432 (07:52-07:55)
- ~~RRL - GDR3 5803344347315072 (07:59-08:05)~~
- BHB - GDR3 2093867037243610 88 (UT 08:08-08:16)
- BHB - GDR3 2093867037243610 88 (UT 08:16-08:28)
- ~~BHB - GDR3 3331748140308820352 (UT 08:29-8:37)~~

Weather Downtime (UT 08:29-12:51)

PEPSI LOG:
https://drive.google.com/file/d/1XBQsUgE6oIjow7mminRuQ5GXPrcNYc-D/view?usp=sharing

Weather:

Night started out well with clear skies and sub-arcsecond seeing. Clear skies soon turned to cirrus skies, and then patchy skies, and then mostly-cloudy skies. The seeing blew up briefly in the first third of the night, but mostly maintained sub-arcsecond status. We fought the clouds as best we could, but they eventually did us in.

Overview (times are given in UT):

23:30 Initializing LUCI2.

23:36 Running OSU_SCAT_LUCI darks.

23:37 Waking MODS.

23:38 Running modsSimSnap.

23:46 Looks like SimSnap didn’t expose the Imaging Snap on mods1b.

23:50 Running OSU_SCAT_LUCI H imaging flats.

23:51 Running SimSnap 1. All images taken this time.

23:56 Running bin11 arcs on MODS.

23:57 Running OSU_SCAT_LUCI J imaging flats.

00:01 Running OSU_SCAT_LUCI K imaging flats.

00:12 Opening,

00:29 Pointing check.

00:43 Collimation check.

UVa

TIC 278352276 (UT 00:49-00:54)

00:49 Preset

00:51 Starting science. Seeing is 0.7” on SX guider, 0.8” on DX guider. Skies are clear but clouds are coming out of the NW.

00:53 CD3 SNR: 142, CD6 SNR: 162

TIC 322727163 (UT 00:54-00:59)

00:54 Preset
00:56 Starting science. Seeing is 0.7” on SX guider, 0.8” on DX guider.

00:58 CD3 SNR: 118, CD6 SNR: 138

TIC 414026507 (UT 00:59-01:06)

00:59 Preset

01:01 Just off on SX. Steve is nudging.

01:03 Starting science. Seeing is 0.7” on SX guider, 0.8” on DX guider. Thin cirrus are starting to move in.

01:05 CD3 SNR: 123, CD6 SNR: 153

TIC 25818450 (UT 01:06-01:14)

01:06 Preset

01:08 Starting science. Seeing is 0.7” on SX guider, 0.8” on DX guider, 1.1” on DIMM.

01:13 CD3 SNR: 156, CD6 SNR: 178

TIC 307119043 (UT 01:14-01:20)

01:14 Preset

01:15 12-degree twilight.

01:18 Starting science. Seeing is 0.7” on SX guider, 0.9” on DX guider, 1” on DIMM.

01:19 CD3 SNR: 140, CD6 SNR: 145

TIC 52856877 (UT 01:20-01:26)

01:20 Preset

01:22 Starting science. Seeing is 0.8” on SX guider, 0.9” on DX guider, 1.4” on DIMM.

01:25 CD3 SNR: 128, CD6 SNR: 145

HIP 104548 (UT 1:26-01:31) Telluric

01:26 Preset

01:29 Starting science. Seeing is 0.9” on both guiders, 1.1” on DIMM.

01:30 CD3 SNR: 421, CD6 SNR: 388

OSU

Clusters - J03173+4851 (UT 01:31-01:35,01:45-1:51)

01:31 Preset

01:35 Starting science. Seeing is 1” on both guiders, 2” on DIMM.

01:42 CD3 SNR: 39, CD5 SNR: 31. Goal is 50 in CD3, 100 in CD5. Seeing has degraded and the cirrus are still overhead. We’re upping the exptime from 180s to 600s. Seeing is 1” on SX guider, 1.4” on DX guider, 1.8” on DIMM.

01:45 Just realized the 100 fiber is in, but the readme calls for 300. This was an OB generation error. Aborting exposure and restarting science with correct fiber and the original exptime. All other Clusters OBs have been fixed. Also 18-degree twilight.

01:50 CD3 SNR: 64, CD5 SNR: 90. Mark says the red SNR is close enough.

Clusters - J0335+4906 (UT 01:51-02:00)

01:51 Preset

01:52 Missed it on SX. Steve is nudging.

01:53 Resending preset.

01:54 Starting science. Seeing is 1.2” on both guiders, 1.5” on DIMM.

01:59 CD3 SNR: 69, CD5 SNR: 92.

Clusters - J0324+4953 (UT 02:00-02:06)

02:00 Preset

02:02 Starting science. Seeing is 0.6” on SX guider, 0.9” on DX guider, 1.9” on DIMM.

02:06 CD3 SNR: 64 CD5 SNR: 80. Mark says red SNR is good enough. It’s a bluer, K2 star.

Clusters - J03165+4832 (UT 02:07-02:16)

02:07 Preset

02:09 Starting science. Seeing is 0.7” on SX guider, 0.9” on DX guider, 1.4” on DIMM.

02:15 CD3 SNR: 72 CD5 SNR: 97

Clusters - J0325+4822 (UT 02:16-02:21)

02:16 Preset

02:18 Starting science. Seeing is 0.5” on SX guider, 0.7” on DX guider.

02:21 CD3 SNR: 65 CD5 SNR: 80. SNR is ok.

Clusters - J0327+5010 (UT 02:21-02:28)

02:21 Preset

02:23 Starting science. Seeing is 0.5” on SX guider, 0.7” on DX guider, 1.3” on DIMM.

02:28 CD3 SNR: 64 CD5 SNR: 79. SNR is ok.

Clusters - J0328+4900 (UT 02:30-02:37)

02:30 Preset

02:32 Starting science. Seeing is 0.5” on SX guider, 0.7” on DX guider, 1.4” on DIMM.

02:36 CD3 SNR: 70 CD5 SNR: 94

Clusters - J0336+4823 (UT 02:37-02:43)

02:37 Preset

02:39 Starting science. Seeing is 0.5” on SX guider, 0.7” on DX guider, 1.1” on DIMM.

02:42 CD3 SNR: 75 CD5 SNR: 98

Clusters - J0316+4922 (UT 02:43-02:51)

02:43 Preset

02:44 Starting science. Seeing is 0.5” on SX guider, 0.6” on DX guider, 1.1” on DIMM.

02:50 SNR: 63 CD5 SNR: 87

Clusters - J0318+4850 (UT 02:51-03:00)

02:51 Preset

02:52 Seeing is 0.4” on SX guider, 0.5” on DX guider, 1.1” on DIMM. Thicker clouds are about on top of us. We’re doubling exptime from 360s to 720s.

02:57 Clouds are starting to cover the target. Stopping at 360s.

02:59 SNR: 59 CD5 SNR: 84

Clusters - J0317+4958 (UT 03:00-03:21)

03:00 Preset. Still covered by clouds.

03:05 Starting science. Seeing is 0.5” on SX guider, 0.6” on DX guider. Increased exptime from 420s to 900s.

03:15 This patch of clouds seems to be moving on.

03:20 SNR: 70 CD5 SNR: 101

Clusters - J0315+5230 (UT 03:21-03:30)

03:21 Preset. Increasing exptime from 180s to 360s.

03:23 Starting science. Seeing is 0.4” on SX guider, 0.5” on DX guider, 0.9” on DIMM. Sky is relatively clear where we’re pointed.

03:30 SNR: 94 CD5 SNR: 133

Clusters - J0320+4653 (UT 03:30-03:37)

03:30 Preset

03:32 Starting science. Seeing is 0.4” on SX guider, 0.5” on DX guider. Sky is relatively clear where we’re pointed.

03:36 SNR: 65 CD5 SNR: 88

~~Clusters - J0331+4655 (UT 03:37-03:56)~~

03:37 Preset

03:38 Increasing exptime from 660s to 900s.

03:39 Starting science. Seeing is 0.6” on SX guider, 0.7” on DX guider. Patchy clouds. More thick clouds are on the western edge of the all-sky.

03:46 Counts have been low so far. Pesky clouds.

03:55 SNR: 50 CD5 SNR: 67. We'll come back to this.

~~Clusters - J0338+4836 (UT 03:56-04:04)~~

03:56 Preset. Increased exptime from 240s to 600s.

03:58 Waiting on guiding and WFSing. Can’t really see the target.

Weather Downtime (UT 03:56-07:06)

04:04 Clouds have increased. Closing.

04:23 Running UVa_BCD arcs and flats on LUCI2.

04:24 Running bin11 pixel flats on MODS.

05:33 Running bin11 biases on MODS.

06:56 Opening.

UVa

TIC 367448265 (UT 07:06-07:18)

07:06 Preset. Patchy clouds.

07:08 Missed on SX.

07:10 Pointing check.

07:12 Resending preset.

07:15 Starting science. Seeing is 0.9” on both guiders, 2” on DIMM.

07:17 CD3 SNR: 370, CD6 SNR, 354

Multistar - TIC 336882813 (UT 07:18-07:30)

07:18 Preset. AZ unwrap.

07:23 Starting science. Seeing is 0.8” on guiders.

07:29 CD3 SNR: 123, CD6 SNR, 158

OSU

~~Clusters - J0338+4836 (UT 07:30-07:33)~~

07:30 Preset.

07:33 In a cloudy part of the sky. Changing targets.

RRL - GDR3 5612628838262556160 (UT 07:33-07:52)

07:33 Preset.

07:36 Missed it on SX. Pointing check.

07:38 Resending preset.

07:40 There seems to be a mismatch between these RRL target dec coordinates in the README and the dec coordinates pulled by PEPSI from Gaia. We’ve observed many of these

targets with no issue (that's to say, we've always landed on a target and largely hit the SNR target). Mark and I discussed this and decided to continue as we have been.

07:50 Starting science. Seeing is 1" on SX guider, 1.1" on DX guider, 0.9" on DIMM.

07:51 CD3 SNR: 114, CD5 SNR, 125

RRL - GDR3 5606573243611826432 (07:52-07:55)

07:52 Preset.

07:53 Starting science. Seeing is 1" on SX guider, 1.1" on DX guider.

07:54 CD3 SNR: 85, CD5 SNR, 87. SNR is ok.

07:55 Preset to next target. Below 26 degrees. Will be better about using the PEPSI visibility plot to help Mark determine which RRL target to observe next. Choosing a different target.

~~RRL - GDR3 5803344348473150 72 (07:59-08:05)~~

07:59 Preset

08:01 Didn't get either side. Might be too cloudy.

08:02 Pointing check.

08:04 Resending preset.

08:05 Clouds have taken over. Switching targets.

BHB - GDR3 2093867037243610 88 (UT 08:08-08:16)

08:08 Preset.

08:12 Starting science. Seeing is 1.1" on SX guider, 1.4" on DX guider, 1" on DIMM. Increased exptime from 100s to 130s.

08:15 CD3 SNR: 149, CD5 SNR, 193

BHB - GDR3 2093867037243610 88 (UT 08:16-08:28)

08:08 Preset. AZ unwrap.

08:21 Starting science. Seeing is 0.9" on both guiders, 1.1" on DIMM.

08:27 CD3 SNR: 65, CD5 SNR, 85

~~BHB - GDR3 3331748140308820352 (UT 08:29-8:37)~~

08:29 Preset.

08:31 Missed it on SX. Steve is nudging

08:32 Resending preset.

08:33 Cloudy here. Waiting on guiding and WFSing.

Weather Downtime (UT 08:29-12:51)

08:37 Clouds have overrun us. We're closing again.

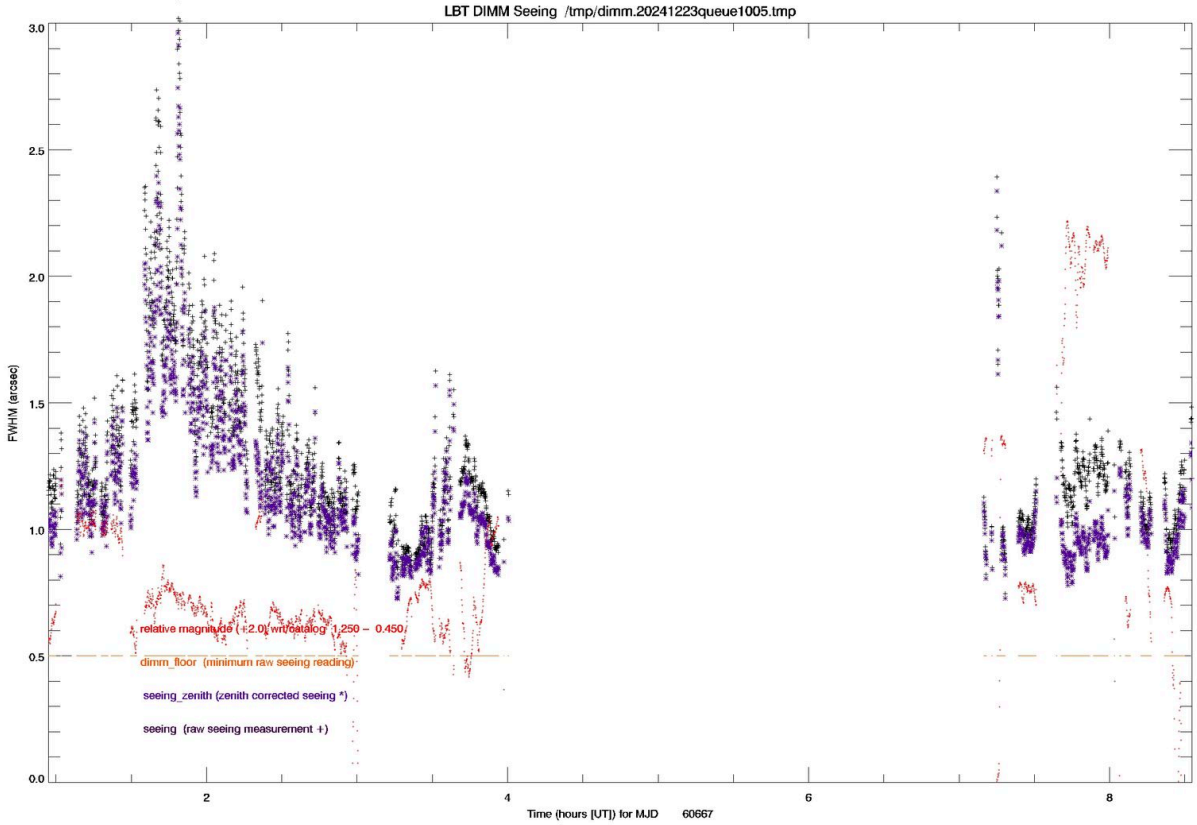
12:49 Running arcs+flats, 0.25" K G210 for AZ-2024B-026.

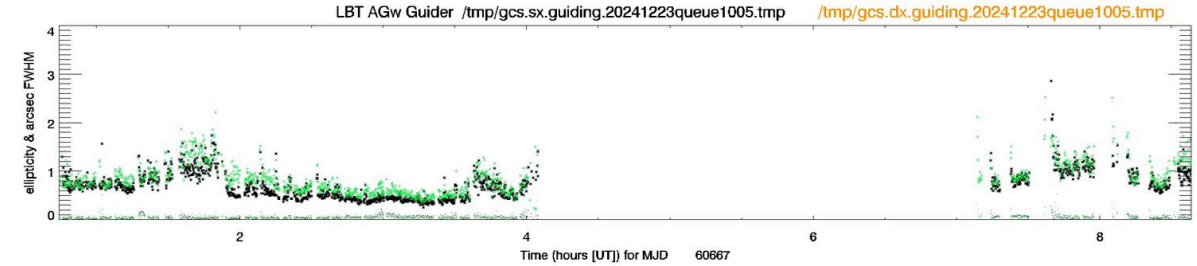
12:50 18-degree twilight

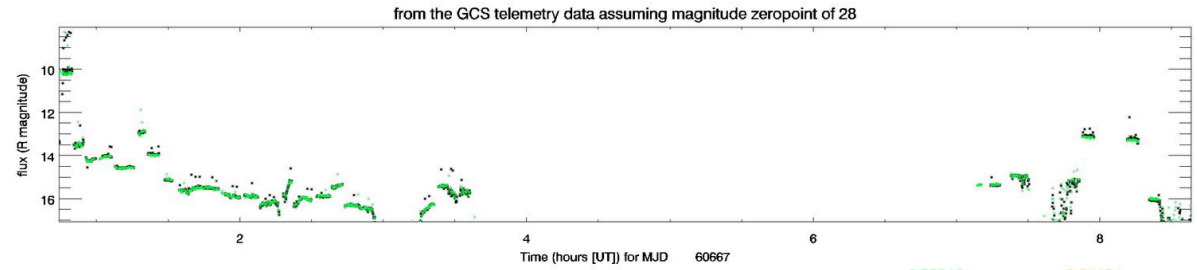
12:51 Calling it a night.

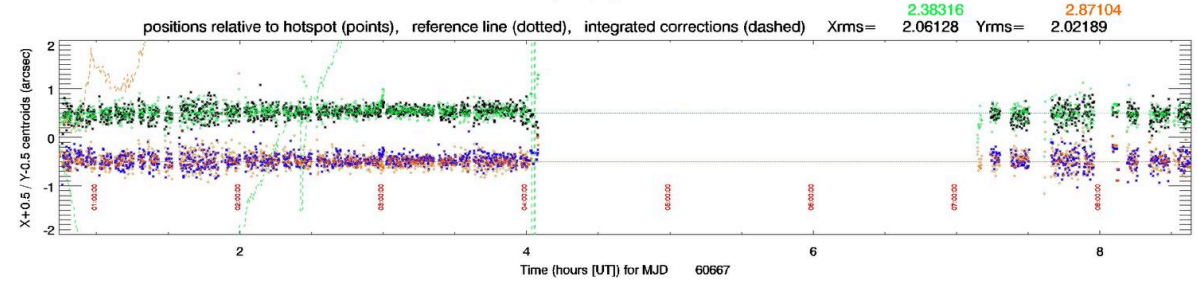
13:12 Running PEPSI cals.

13:20 12-degree twilight.


LBT DIMM Seeing /tmp/dimm.20241223queue1005.tmp
FWHM (arcsec)
relative magnitude (±2.0 wrt catalog 1.250 – 0.450
dimm_floor (minimum raw seeing reading)
seeing_zenith (zenith corrected seeing *)
seeing (raw seeing measurement +)
Time (hours [UT]) for MJD 60667


LBT AGw Guider /tmp/gcs.sx.guiding.20241223queue1005.tmp /tmp/gcs.dx.guiding.20241223queue1005.tmp
ellipticity & arcsec FWHM
Time (hours [UT]) for MJD 60667


from the GCS telemetry data assuming magnitude zeropoint of 28
flux (R magnitude)
Time (hours [UT]) for MJD 60667


2.38316
2.87104
positions relative to hotspot (points), reference line (dotted), integrated corrections (dashed) Xrms= 2.06128 Yrms= 2.02189
X+0.5 / Y-0.5 centroids (arcsec)
Time (hours [UT]) for MJD 60667

Cals
MODS:
~~Arcs1x2~~
~~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

Note: DThompson took some images with LUCI2 to aid in LUCI1 investigation. Blind mask was put back in FPU at noon.