LBT Observing Log for 2023 June 15/16

C19 Observer: Andrew Cardwell (From obs1, x2go session 50)
Partner Observer(s): Mark Whittle (UV, remote), Caprice Phillips (OSU, remote)
Telescope Operator: Steve Allanson

Plan:

LUCI2 is out of action, and likely to remain that way for the remainder of the semester. LUCI1 is available.

Start with LBCs, OSU_monitor (priority 2 targets) and, if seeing good, then OSU_delve:
N4236; N4605; 4214; 4395; 4449; Delve: Bootes-V:
Then go to LUCI to do UM_Nv23A

Summary:

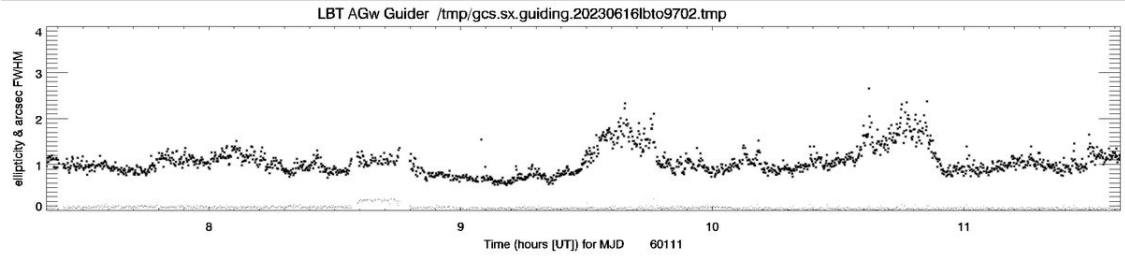
Seeing plots from the DIMM and SX guider are included below.

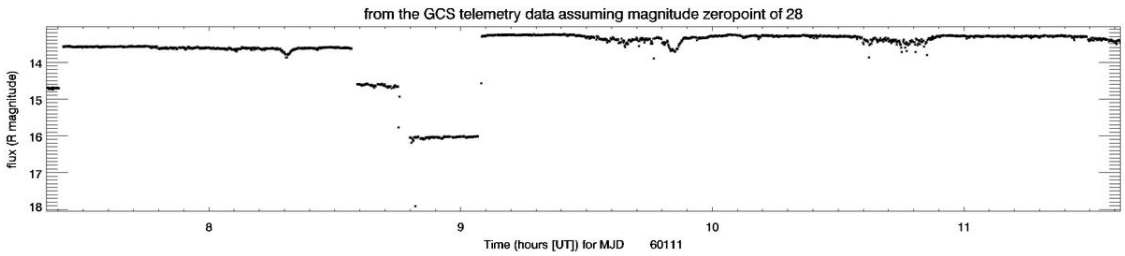
Completed:
LBC
OSU_monitor: N4236 (one or more R images may have stray light)
OSU_monitor: N4605 (one or more R images may have stray light)
OSU_monitor: N4214 OK (stray light fixed)
OSU_monitor: N4395 OK

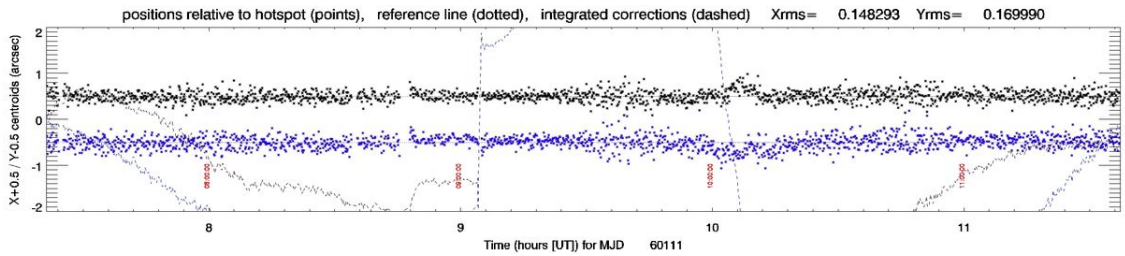
OSU_delve: Bootes-V: ran OB twice to achieve required depth (seeing > 0.8). First OB has B & R cameras at 90 to each other. For second, edited OB so both are at 90 (as stated in the readme). The OBs also had the coordinates of Delve5, not BootesV, and this took time to discover and correct.

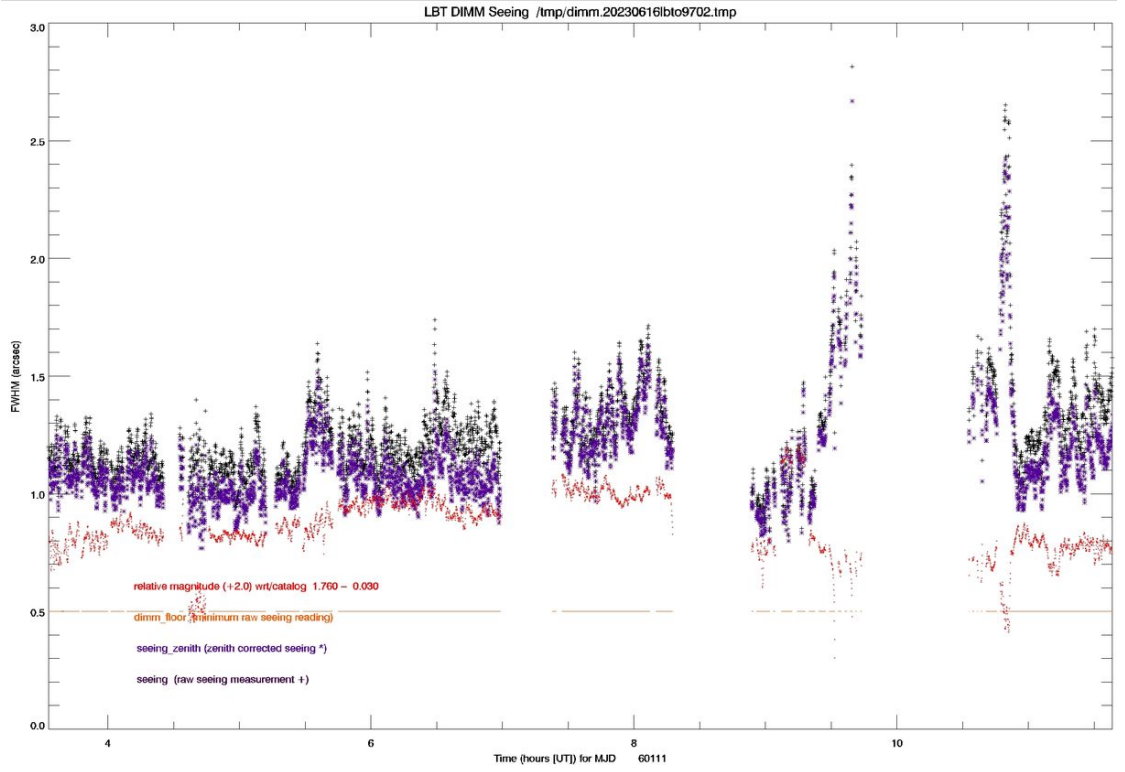
LUCI-1 monocular
UM_Nv23A: AT2023ctx HKspectra + Telluric;
UM_Nv23A: V606Vul: HKspectra + Telluric;
UM_Nv23A: V606Vul: zJspectra + Telluric;

IQ plot (courtesy of Christian): http://people.lbto.org/~cveillet/Chris/lbcIQ_DIMM_20230616z.png


LBT AGw Guider /tmp/gcs.sx.guiding.20230616lbto9702.tmp
ellipticity & arcsec FWHM
Time (hours [UT]) for MJD 60111


from the GCS telemetry data assuming magnitude zeropoint of 28
flux (R magnitude)
Time (hours [UT]) for MJD 60111


positions relative to hotspot (points), reference line (dotted), integrated corrections (dashed) Xrms= 0.148293 Yrms= 0.169990
X+0.5 / Y-0.5 centroids (arcsec)
Time (hours [UT]) for MJD 60111


LBT DIMM Seeing /tmp/dimm.20230616lbto9702.tmp
FWHM (arcsec)
relative magnitude (+2.0) wrt/catalog 1.760 – 0.030
dimm_floor (minimum raw seeing reading)
seeing_zenith (zenith corrected seeing *)
seeing (raw seeing measurement +)
Time (hours [UT]) for MJD 60111

Issues:

A scissorlift was left charging on the right side of the telescope. It seems the LEDs were contaminating our LBCR exposures. It was turned off.

Overview (times are given in UT):

00:48 Powering on LBCs. Bad bias voltages reported on blue.

00:07 Waking MODS, running simSnap.

00:10 Bringing up LUCI1, init_all.

00:12 LUCI1 field stop alignment confirmed. No adjustment required.

01:20 Repeating simSnap, levels may be a little low on the mods2b flat. Power cycling LBCs.

01:27 MODS2B was a little higher this time. The lamp may still be warming up. Taking a full MODS bias sequence. LBCB low bias voltage warnings were repeated on restart.

01:50 Intermittent, but very low level, LBCR bias patterning. Taking 25 biases on each side. TMS reference from last night copied over.

01:59 TMS lasers are on.

02:27 Opening the enclosure.

02:35 Sunset

02:39 Based on our experience yesterday we will wait 10 minutes before trying for flats.

02:48 Preset to blank sky field.

02:50 Applying the TMS reference from yesterday, starting the TMS loop.

02:52 Starting in U-Spec and R-Bess at PA=0. Saturating.

02:57 Starting full frame flats with manual adjustment of exp times on each side.

03:06 Some thin cloud has blown in.

03:15 PA=180. Wind speeds are rising.

03:21 Likely full set for U_spec. V-Bess at PA=180 pending.

03:22 Done with flats, preset to collimation field for OSU_Monitoring NGC4236.

03:25 Starting collimation.

03:29 No spherical was applied, Steve has given the optics a nudge.

03:30 Collimating again.

03:33 12 degree twilight.

03:35 Moving on to copointing.

03:42 Repeating collimation. User error, I forgot to turn off TMS.

03:45 Setting TMS reference. Collimation was fast, we were only off in focus.

03:47 Preset to science field. DIMM reports 1.1".

03:52 LBCR has a large out of focus reflection from a bright start outside the field.

03:56 IQ of 1.1" measured on blue, and 0.9" in red.

03:59 Preset to collimation field for NGC4605. OSU_Monitor.

04:01 TMS has made a few cycles of correction. I've stopped it now, and started collimation.

04:06 Setting TMS reference.

04:07 Preset to science field.

04:11 18 degree twilight.

04:14 IQ of 1" in blue and 0.85" in red.

Out of focus image on LBCR again. Concern about its origin. Possibly stray light?

04:25 Seeing sufficiently good to try OSU_delve. Preset to copointing field for OSU_delvedwarf, Bootes_5. We will likely have wind issues here, at least initially. (Later learned the OB coordinate was incorrect – see below).

04:27 Wind is a problem. Preset canceled. Preset to collimation field for OSU_monitor NGC4214.

04:32 x2go issue. Session killed and resumed. Starting collimation.

04:37 Collimated, taking copointing exposure.

04:44 Copointed. Sending science preset.

04:48 We have the same LBCR stray light issue again.

05:05 Possible culprit, a scissorlift was left charging. Steve turned it off and the problem appears to have disappeared. Repeating this OB to get a ‘clean’ first exposure.

05:11 Preset to Bootes_5. We can’t point there it’s right in the wind. There seems to be an error in the OB file for this target. Confirmed – coordinate in the OB is the coordinate of delve5. Edit the OB to insert the correct coordinate. Wind is better there, so try again after NGC 4395.

05:15 Preset to OSU_monitor NGC4395 collimation field.

05:22 Collimated, copointing.

05:27 Sending science preset. Copointing exposures have IQ of 0.8”.

05:33 IQ of 1.2” measured in the first science exposures. DIMM reports 1.2” / 1.3”.

05:42 Preset to BootesV collimation field.

05:45 Good IQ in collimation field, moving directly to science. 1.1” in blue, 0.9” in red.

05:53 Initial exposures have IQ of 1.1” in blue and 0.9” in red. Noticed that Blue was rotated to zero while Red was rotated to 90. Called contact (Burcin Mutlu-Pakdil: 8063193963) no reply, left message. Since seeing slightly worse than their threshold (0.8 arcsec), we decided to repeat the integration (as requested in the readme), but rotate both to 90 (as stated in the readme – in order to get guide stars). Guessing that the different rotations for red and blue was an error.

06:17 IQ remains steady. lbcr.20230616.061002.fits has an airplane trail.

06:23 Setting PA to 90 degrees on both sides and repeating. New script generated from the OT.

06:33 IQ of 1.25” measured in blue and 1” in red.

06:47 lbcr.20230616.064048.fits and lbcb.20230616.064055.fits are impacted by airplane lights.

07:00 Reconfiguring to LUCIs. We don't have LUCI1 mono scripts and are moving fast to fix. Also there are errors in the scripts. HD 189920 for AT2023CTX and the telluric for V606 are set up for J but marked as HKspec… (Huge thanks to Jenny who did the OT changeover!)

07:05 TMS lasers are off.

07:24 Preset to UM_Nv23A: AT2023CTX, LUCI LS, HKSpec. Script updated to LUCI1 mono, and a brighter GS selected.

07:36 Very poor finder! I finally had to go back to the OT and a 2MASS K exposure.

07:40 Manual correction was required to center the target. Starting science.

07:41 LUCI1 camera error.

07:45 Starting science. The LUCI1 camera wheel was in its negative limit. Luci1.20230616.0007-0026.

07:55 1.15" from the SX guider.

08:33 0.8" from SX guider. Preset to Telluric HD189920. HKSpec LS. Acquisition begins with luci1.0027. (some confusion in the readme provided in the name of the telluric to be used.)

08:38 Acquisition confirmed, starting science. Luci1.0030-0037.

08:44 Spectra look good. SX guider reports 1".

08:45 Preset to telluric for next target, HD333345, HKSpec LS. Acquisition begins with luci1.0038.

08:51 Acquisition confirmed, starting science. Luci1.0041-0048.

08:57 Switching to zJSpec and starting science. LUCI1.0049-0056.

09:04 Preset to UM_Nv23A: V606Vul, HKSpec, LS. Acquisition begins with luci1.0057.

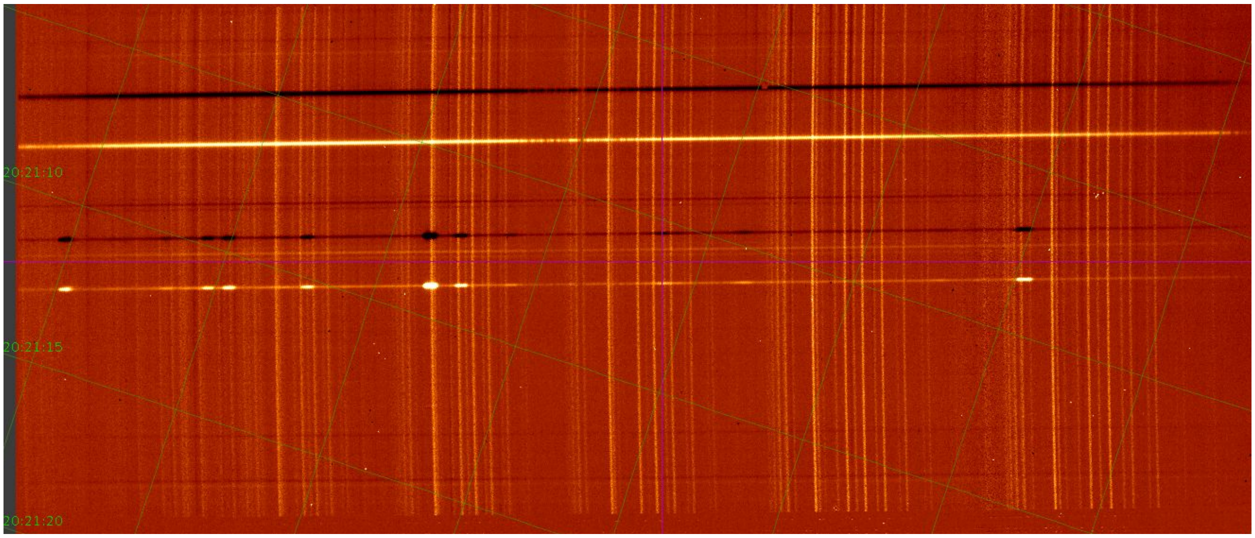
09:11 Acquisition confirmed, starting science. Luci1.0061-0080. SX guider reports 0.7".

09:38 Seeing is degrading, guider is reporting values up to 1.9".

09:39 now 2.2".

09:42 I'd estimate the seeing is averaging out at 1.8".

09:59 Taking zJSpec exposures. 0.8” from the SX guider.



10:07 1.2” from the SX guider. Subtraction of the first two exposures above.

10:29 18 degree twilight.

10:44 1.6” from the SX guider.

10:48 End of script. Given the poor seeing we are taking additional exposures until 12 degree twilight.

11:05 1.1” from the DIMM, 0.85” from the SX guider.

11:07 12 degree twilight.

11:19 1” seeing from the guider.

11:37 End of observations. LUCIs safed. Closing the enclosure. Sky visible in z for final couple of exposures.

11:42 MODS have been put to sleep.

11:47 Taking 25 LBC biases on each side.

12:03 Biases finished. POwering off the LBCs. End of night.

12:05 Sunrise.

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Tentative plan for tomorrow: June 16/17
Start with MODS:
Flux standard gd153 end UT 4:00
UM_XMD SBS1211 (1h) end UT 5:00
UM_XMD SBS1249 (1h) end UT 6:00
ND_bluegals J1342 (20m) end UT 6:30
ND_V844her (2.4h) end UT 9:00 [1x2 binning]

Change to LUCI (done by UT 9:15) aim to complete one nova in zJ.
UM_Nv23A AT2023cxt + Telluric: zJ (ends UT 10:30) Continue into twilight.