LBT Observing Log for 2023 June 18/19

C19 Observer: Andrew Cardwell (From obs1, x2go session 50) Partner Observer(s): Rick Pogge (OSU, remote). Telescope Operator: Steve Allanson

PEPSI Log

Plan:

We will start with LBCs. High winds out of the SW in that quadrant of the sky are restricted unless the wind drops so no gusts up to 17 m/s. This eliminates all start-of-night MODS targets

LBC: start to 07UT - OSU_delvedwarfs delve4, OSU_monitor I2574, N4449, N6503, & N6946

PEPSI: ~0700-0930 UT - In order: OSU_BHBinaries J1833-1154, OSU_FGKBDS BD+06 2986 and BD+24 4329, OSU_BHBinaries J2020+2758 and J2201+4741, then UVa_Multistar TIC414026507, stop at ~0930UT to reconfigure for LUCI

LUCI: ~0930 UT to dawn (12-deg): UM_Nv23A AT2023CTX_zJSpec + telluric HD189920

Summary:

Completed the program plan. Had episodes of bad seeing and clouds, but otherwise a good night.

Issues:

Overview (times are given in UT):

01:25 LBCs are powered on, LBCB bias errors on startup. Running 2 bias bino checkout.

01:33 Waking MODS, running simSnap.

01:37 Several LBCR biases with strong features. Lbcr.20230619.013529.fits, lbcr.20230619.013622.fits.

01:41 Dark feature on mods1b simSnap flat, mods1b.20230619.0002. Homing AGws and taking another. Maybe an out of focus moth?



01:45 Steve is gathering the filenames of the bad lbcr biases and adding them to the IT. Init_all on LUCI1.

01:46 No adjustment required on LUCI1 field stop.

01:48 No change in the mods1b feature. Changing filter to u_sdss and trying again.

01:58 Visible in u too.

02:01 We are talking to Olga. Lamp off. Rotator to 105 for MODS access. Brian and Steve are going up to check things out.

02:23 It does appear to be moving in subsequent exposures, but it's not gone yet.

02:36 Sunset

02:41 Troubleshooting continues. Rick is online now. Internal inspection has not turned up any obvious obscuring object on MODS1B

02:49 Wind gust of 18 m/s. Pointing to the SW is not an option.

02:52 Opening up as MODS1B troubleshooting continues. Gust of 18 m/s.

02:58 Imaging in MODS1B grating mode to see the full field (like a slitless flat). Moving the filter wheel back and forward.

03:04 Opening delayed, spike in particle counts. The moth appears to have moved out of the imaging field. Likely location is in the camera proper, probably the camera field lens.

03:09 Object is still there, in the spec field, but it has moved outside the imaging field. The best way to see it is in grating mode using the configuration to acquire slitless pixel flats which illuminates the entire CCD.

03:23 Opening up. Particle counts have dropped.

03:29 Preset to collimation field for OSU_delvedwarf, delve4.

03:33 TMS lasers are on. Running a few rounds of correction using yesterday's reference.

03:34 12 degree twilight.

03:35 Starting collimation.

03:41 dohybrid failed, it looks like lbcr is in focus. It may be that the lasers were not warmed up and TMS could not apply its reference. Trying that again.

03:48 Gust of 21 m/s.

03:51 Running dohybrid. TMS thought we were in the collimation focus position and was not applying corrections. Cleared optics, applied TMS for 2 cycles. Running dofpia.

03:58 Collimated, copointing.

04:03 Preset to science field. Copointing field had an IQ of 1" in blue and 1.1" in red. Wind is still a factor.

04:12 18 degree twilight.

04:13 IQ of 1.1" on both sides in first science exposures.

04:24 Gust of 19.1 m/s.

04:35 lbcr.202230619.042736 has poor IQ. It looks like either a wind gust or a sudden softening of collimation. Blue has an IQ of 1.1".

04:41 Preset to collimation field for I2574. Letting TMS run for a few cycles and collimating. The last few exposures suggest LBCs are not thermally stable yet.

05:54 Collimated, setting TMS reference.

04:55 Preset to science field. Starting TMS.

05:03 IQ of initial exposures is 1.35" in blue and 1.2" in red. Some elongation, which is in the same direction on both sides. Wind buffeting?

05:10 Preset to NGC4449 collimation field.

05:15 Given the PSF in the last target I am collimating again. If it's not just wind it should be correctable.

05:21 Collimation converged. Setting TMS reference. There were very few pupils for collimation.

05:22 Preset to science field.

05:28 IQ of 1.4" in blue and 1.3" in red. RB_Science had died, images were not updating.

05:31 Checking MODS1B, our little moth friend in MODS1B appears to have moved on! For now...

05:34 Preset to NGC6503 collimation field.

05:36 Collimating. We are at higher elevation (50 degrees), and hopefully will have a more useful number of pupils here.

05:41 Lots of pupils here!

05:42 Collimated, TMS reference set. Copointing.

05:47 Preset to science field. TMS is running. Copointing exposure had an IQ of 1.2" in blue and 1" in red.

05:57 IQ of 1.25" in blue and 1.1" in red in initial exposures.

06:12 Present to **NGC6946**. I ran the wrong OB, science rather than copointing, so let's see how the first exposures look.

06:14 IQ looks good, as does PSF quality! Continuing with science exposures. 1.1" on both sides.

06:40 IQ of 1.45" in blue and 1.2" in red.

06:43 Reconfiguring for PEPSI

07:09 Preset to **J1833-1154**.

07:11 Starting science.

07:22 Clouds. Seeing has degraded.

07:29 Preset to **BD +06 2986**

07:32 Starting science. It's a little cloudy here, increasing exp time to 5mins. Guiders now reporting 1".

07:38 Preset to **BD +24 4329**. Long slew in AZ.

07:42 Starting science.

08:47 S/N of 149 in the blue spectra and varying from 99 to 149 in the red.

08:48 Preset to 2MASS J20205395.

08:49 No GS found on either side. Steve is performing a pointing chek.

08:52 Sending the preset again.

08:54 Starting science.

09:14 Preset to 2MASS J22014363.

09:17 Starting science.

09:24 The PEPSI interface is unresponsive. I can move around individual GUIS, but not interact with their content. Restarting pepsi control software.

09:26 Preset to TIC 414026507.

09:28 Starting science.

09:36 Reconfiguring to LUCI. PEPSI has been disengaged.

09:38 Starting PEPSI cals.

09:46 Preset to **UM_Nv23A-523Jun, AT2023ctx**. LUCI1 LS, **zJSpec**. Unfortunately our target is in the cloud patch in the south.



09:56 Manual adjustment of +1 pix in x was required. Starting science. luci1.20230619.0007-0026..

09:59 Strong emission line features in first spectra.

10:29 18 degree twilight.

10:46 Preset to telluric, HD189920.

10:50 Starting science. Luci1.0030-

10:51 LUCI1 camera wheel error. Moving from N3.75 to N1.8. The camera wheel was in its negative limit.

10:53 Recovered. Re-starting science. IT 7253 updated.

11:00 End of science. Closing up.

11:07 12 degree twilight.

12:05 Sunrise.