C19 Observer:  Andrew Cardwell (From obs1, x2go session 51)
Partner Observer(s): M. C. Johnson, A. Pai-Asnodkar (OSU)
Telescope Operator: Steve Allanson

## Plan:

-Start with MODS calibrator and then UM, ND MODS observations
-Time-critical OSU PEPSI exoplanet observations
-Finish with UM PEPSI observations

## Observed and completed:

MODSPhotCal/feige34
UM_XMDs_MODS/UGC5541
ND_LLSgals/pg1206g177
MODSPhotCal/feige66
OSU_PETS/WASP189 [Note: only completed ~4.5 of the planned 6 hours, but this is sufficient to have usable data]
UM_PEPSI-TCrB/TCrB

## Summary:

Seeing at open poor (~1.9 arcsec) but improved to ~1.4 arcsec by the time of observing a MODS calibrator.  Improved to ~1.2 on the guider by the time the first science observation had concluded. Conditions otherwise clear. A few cirrus during observing PG1206+459 but vanished before long. Switched to PEPSI after two MODS science targets and two MODS calibrators, although the wind began increasing out of the SW around this time. Despite wind hovering near the limits at times the time-critical observations were successfully completed.

## Issues:

## Overview (times are given in UT):

00:42 Bringing up the GUIs and waking MODS.

00:55 Running simSnap.Looks fine.

01:09 Bringing up the LUCI GUIs, init_all on both sides.

01:15 LUCI2 MOS error: Given that we are close to sunset I’ve called Dave T. to look into this. Enclosure open.

1916.10.07 22:45:56 u | error high | obs1.mou | Engineer | ObserverPanel@o | InstrumentManagerPanel.java#done(721) | Error committing setup
1916.10.07 22:45:56 u | error medium | obs1.mou | Engineer | ObserverPanel@o | InstrumentManagerClient.java#commitSetup(65) | Error committing setup to instrument manager at "rmi://luci.luci.lbto.org:60002/TWO_InstrumentManager"!
2023.03.27 01:14:02 s | error medium | luci.luc | Luci TWO | TWO_InstrumentM | RMIInstrumentManagerImpl.java#commitSetu(323) | error while committing setup MOS
2023.03.27 01:14:02 s | error medium | luci.luc | Luci TWO | TWO_InstrumentM | MOSUnitClient.java#maskToCabinet(108) | Error while trying to return mask 3 to the cabinet at MOS unit "rmi://localhost:60002/TWO_MOSUnit"!
1916.10.07 22:45:56 u | error high | obs1.mou | Engineer | ObserverPanel@o | RMIInstrumentStatusPanelImpl.java#done(322) | MOS Unit status: status error, position unknown, mask number 3

01:19 Aligning LUCI1 field stop. Looks good after a single adjustment. LUCI2 is in a safe state, we can move the telescope.

01:25 LUCI2 issue resolved. Continuing with test presets and LUCI2 fieldstop alignment.

01:30 LUCI2 fieldstop is good, a small adjustment was required.

01:34 Starting instrument will be MODS.

**01:40 Sunset.**

01:49 We will point and collimate near F34.

02:07 DIMM reports 1.85”.

02:13 Preset to Feige34, MODS specphot.

02:24 Starting science. DIMM reports 1.5”, DX guider agrees. SX guider reports ~2” which is likely due to thermal imbalance. Mods[1|2]b.20230327.0003-0005, mods1r.20230327.0006-0008, mods2r.20230327.0005-0007.

**02:29 12 degree twilight.**

02:39 Preset to UGC5541, UM_XMDs_MODS. UT0300 acq selected. Seeing is variable, but appears to be improving. DIMM reports 1.4”.

02:50 The seeing is making it hard to determine which part of the blob of interest we need to center on. Taking another acq exposure on mods1, and pushing the exptime to 120s.

02:57 Through slit exposures also increased to 120s.

**02:58 18 degree twilight.**

02:59 Starting science. Mods[1|2]b.20230327.0006-0008, Mods[1|2]r.20230327.0013-0015. Guiders report 1.2”, but the seeing is varying on short timescales.

03:24 Initial spectra show clear emission lines in the red and blue, Alpha and SII are prominent in the red. Seeing remains variable, but is generally trending down. 1.3” would be a typical value.

03:47 Spectra continue to look good, seeing remains highly variable. Wind is slowly trending up.

04:07 Preset to PG1206, ND_LLSgals. Blind offset acquisition .

04:20 Starting science. Seeing bubble, ~ 2”. Mods[1|2]b.20230327.0009-0013, Mods[1|2]r.20230327.0019-0023.

04:44 Faint continuum trace in the initial spectra. As long as the blind offset was set up correctly in the script we should be fine.

04:50 Clouds are coming in.

05:42 1.3” seeing from the guiders.

05:52 Preset to Feige66, MODS specphot.

06:04 Starting science. Mods[1|2]b.20230327.0014-0016, Mods[1|2]r.20230327.0027-0029.

06:20 Reconfiguring to PEPSI.

06:48 Preset to WASP 189.

06:50 Starting science.

06:56 Initial exposure has SN of 312 in the red and 121 in the blue.

07:19 DIMM reports 1.9”.

08:24 DIMM reports 1.1”.

09:22 1.5” from the DIMM. Wind speeds are trending up again.

10:18 1.3” from the DIMM.

10:52 Target lost on SX. Guiding jump? Resending preset on SX only.

10:53 Preset failed, but the target is nearby, sending an acquire preset this time.

10:56 Back on target. Steve checked the guider images, it looks like a huge seeing bubble confused the guider.

11:34 Preset to T Crb.

11:35 GS not found on DX. Sending DX acquisition preset.

11:38 Starting science.

12:13 Preset to HR 5501, standard.

12:15 No GS found on DX, sending acquire preset for DX.

12:18 1.2” from the DIMM.

12:36 No more targets, closing up. Ilya is sending out the PEPSI log. Safing LUCI.

12:41 Enclosure closed. MODS cals pending.

12:45 Taking MODs cals.

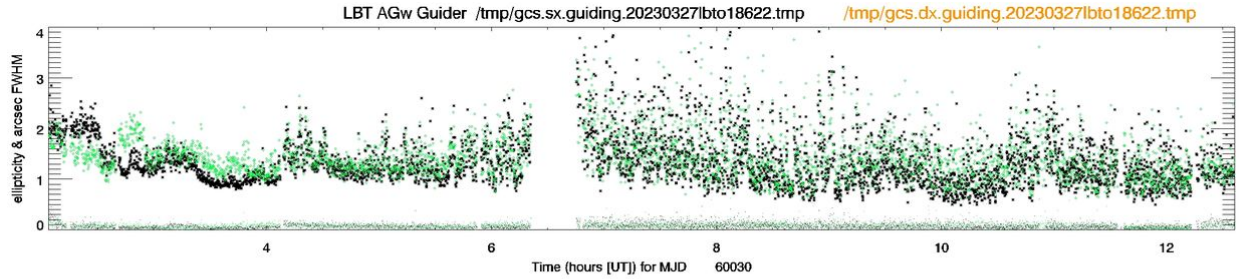
Biases already taken; Mods[1|2]b.20230327.0017-0036, Mods[1|2]r.20230327.0030-0049
MODS DG arcs; Mods[1|2]b.20230327.0037-0039, Mods[1|2]r.20230327.0050-0052.
MODS DG pixflats; Mods[1|2]b.20230327.0040-0049, Mods[1|2]r.20230327.0053-0057
MODS DG 0.6” slit flats; Mods[1|2]b.20230327.0050-0055, Mods[1|2]r.20230327.0058-0063

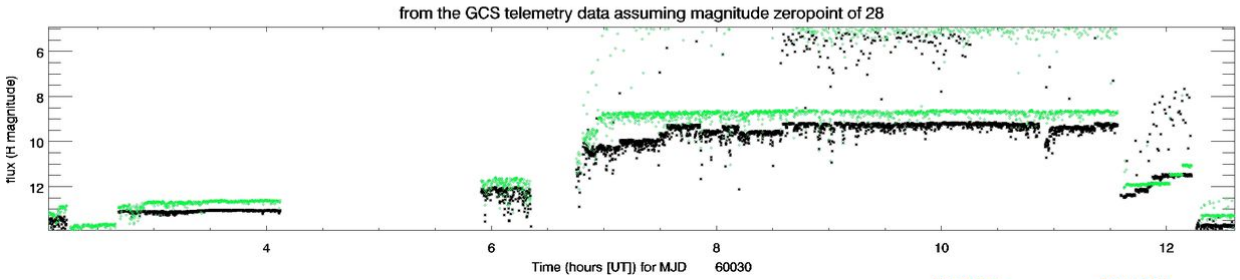
**12:53 18 degree twilight.**

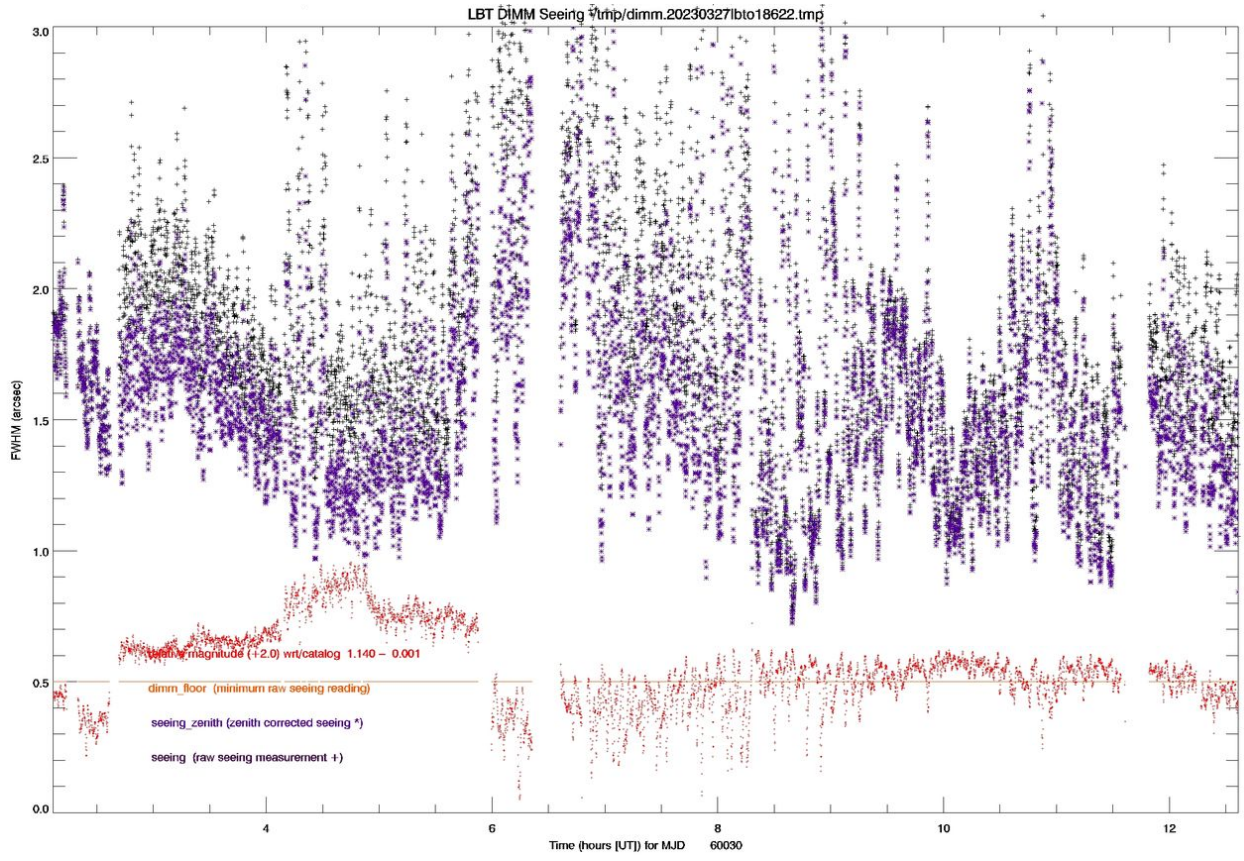
**12:21 12 degree twilight.**

**13:10 Sunrise.**

13:51 Putting MODS to sleep. 1” and 5” slit flats still pending, but SHARK-NIR needs to be filled. I’ve asked sciops to take them later today.


LBT AGw Guider /tmp/gcs.sx.guiding.20230327lbto18622.tmp
/tmp/gcs.dx.guiding.20230327lbto18622.tmp
ellipticity & arcsec FWHM
Time (hours [UT]) for MJD 60030


from the GCS telemetry data assuming magnitude zeropoint of 28
flux (H magnitude)
Time (hours [UT]) for MJD 60030


LBT DIMM Seeing /tmp/dimm.20230327lbto18622.tmp
FWHM (arcsec)
dimm_floor (minimum raw seeing reading)
seeing_zenith (zenith corrected seeing *)
seeing (raw seeing measurement +)
Time (hours [UT]) for MJD 60030