OSURC Nightlog 20220501 UT

Observer*: Olga Kuhn
Lead Partner Observer*: Don Terndrup (OSU)
Other Partner Observers*: Noah Rogers (UM)
Special Assistants*:
AO Operator*:
Telescope Operator: David Gonzalez Huerta
*** = from home**

Plan:

OSU ASASSN NGC3822
OSU XMD LEDA101527
OSU ASASSN NGC 5273
UVA J1631+4426
OSU ASASSN J180531
BD+33 2642

Summary:

Cirrus all night. Repeated some sequences to partly compensate for losses from clouds.

Observed NGC3822, NGC5273 and J180531 from the OSU_ASASSN program, LEDA101527 from OSU_XMDs_MODS and J1631 from UVa_BCD_MODS. We finished with the standard BD33+2642, though started the exposures after 12-deg twilight and the background is bright.

Most of the MODS calibrations were done the previous morning (pixflats, slitflats 0.8, 1, 1.2" and comparison lamps), but I obtained 5" slit flats and biases: 1K and 8K in the morning.

Issues:

- The WFS cutout issue remained, IT 8472. David called John Hill but the only measures to try were: restart GCS, rehome the AGw stages and clear active optics, and these did

not help. This issue can cause collimation problems for guide stars near either the left or right edges of the patrol field - for stars more centrally located, collimation is unaffected.
- Elevation drive stopped - it occurred just around the time the object crossed the meridian. We had to reacquire the target (UVa_BCD_MODS/J1631) to complete the series of spectra.
- The DX shell ripped at the very end of the night. David recovered it. (Loss of connection between FLAO & RTBD)
- MODS - comm glitch on the partner commands on both MODS at the same time.
- MODS - script error (go - exposure already in progress) when GUI had hung on "Exposure Done, Cleaning up…". expdone in the GUI and "r" to retry in the script window enabled us to continue on to take the field acquisition image. An index number was skipped.
- Just to note that the NGC5273.obs script used the object name NGC3822 so the spectra of NGC5273 have object =NGC3822 but objname (which comes from acquisition script) = NGC5273.

Weather:

02:00 UT: Cirrus at sunset extending well to the west. Forecast is for increasing clouds. Decision is to configure for MODS and not try LBC.

07:30 Cirrus continues.

Preparations:

mods[1|2][b|r].20220501.NNNN.fits

Overview (times are given in UT):

02:30 David is opening the enclosure.

02:39 Checking pointing and collimating near the first target, NGC3822

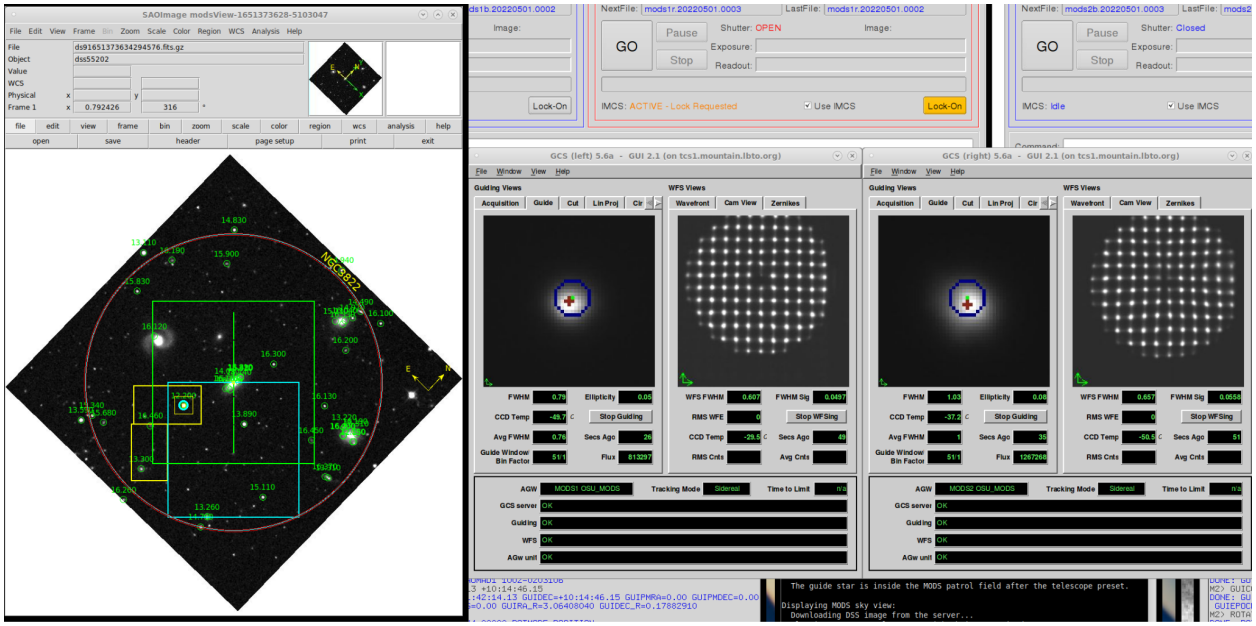
OSU_ASASSN/NGC3822

02:52 acqBinoMODS NGC3822.acq

The WFS pupil is high (cutout too low). The guide star is near the left edge of the patrol field. (IT 8473 & 8472)
David is restarting GCS and I am rehoming the guide stage.

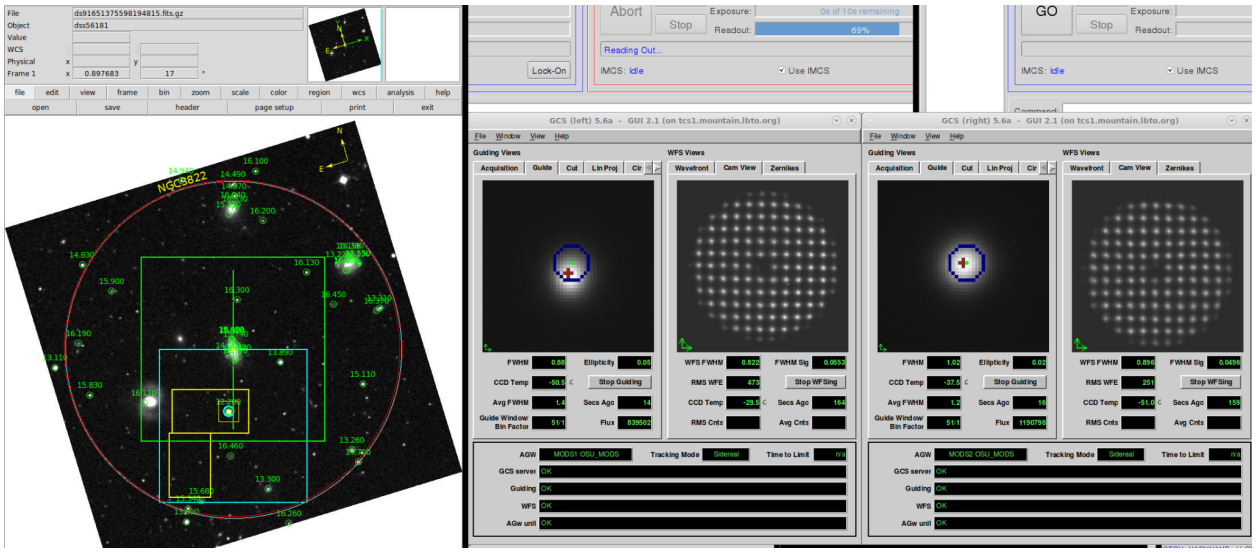
02:56 acqBinoMODS NGC3822.acq

Timeout in PARTNER OSURC command (blue on MODS1 and red on MODS2).



03:12 David is calling John Hill - the recommendation was to do what we did: restart GCS & home the guide probes. Additionally we might try to clear active optics before the preset. All done.

Meanwhile - we changed the PA from 44 to -17 deg since that better matches the parallactic angle at the midpoint of the exposure. It also brings the guide star closer to the x~0 in the patrol field.



m1r: 5 & 6 → offsetxy -0.071 10.661 rel →7 object of right edge, dx=-0.5" → 8, ok
m2r: 8 & 10* → offsetxy offsetxy 3.842 7.430 rel → 11, well-centered.

m2r 8 was readout but then there was a script error "Red Go, already in progress" and the red exposure control hung at "Exposure done, Cleaning up". The next image was 9, so it looked like the field image had not been taken. I issued a "red expdone" and then clicked "r" to retry, and this took the field image, but the index number was 10, not 9.

03:37 execBinoMODS NGC3822.obs

UT	m1b	m1r	m2b	m2r	seeing	airmass
03:37	3-8	9-14	3-8	12-17	0.8/0.84"	1.102

03:54 There was an ~ 1 mag dip in guide star flux affecting the 2nd set of spectra.
04:10 The guide signal has not recovered yet. Will adjust the parallactic angle and repeat the exposure sequence.

04:24 acqBinoMODS NGC3822_edit2.acq (PA=16 deg)

m1r: 15 & 16 → offsetxy -0.486 10.191 rel → 17, ok
m2r: 18 & 19 → offsetxy 3.690 7.314 rel → 20, ok

04:32 execBinoMODS NGC3822.obs

UT	m1b	m1r	m2b	m2r	seeing	airmass
04:32	9-14	18-23	9-14	21-26	0.77/0.84	1.083

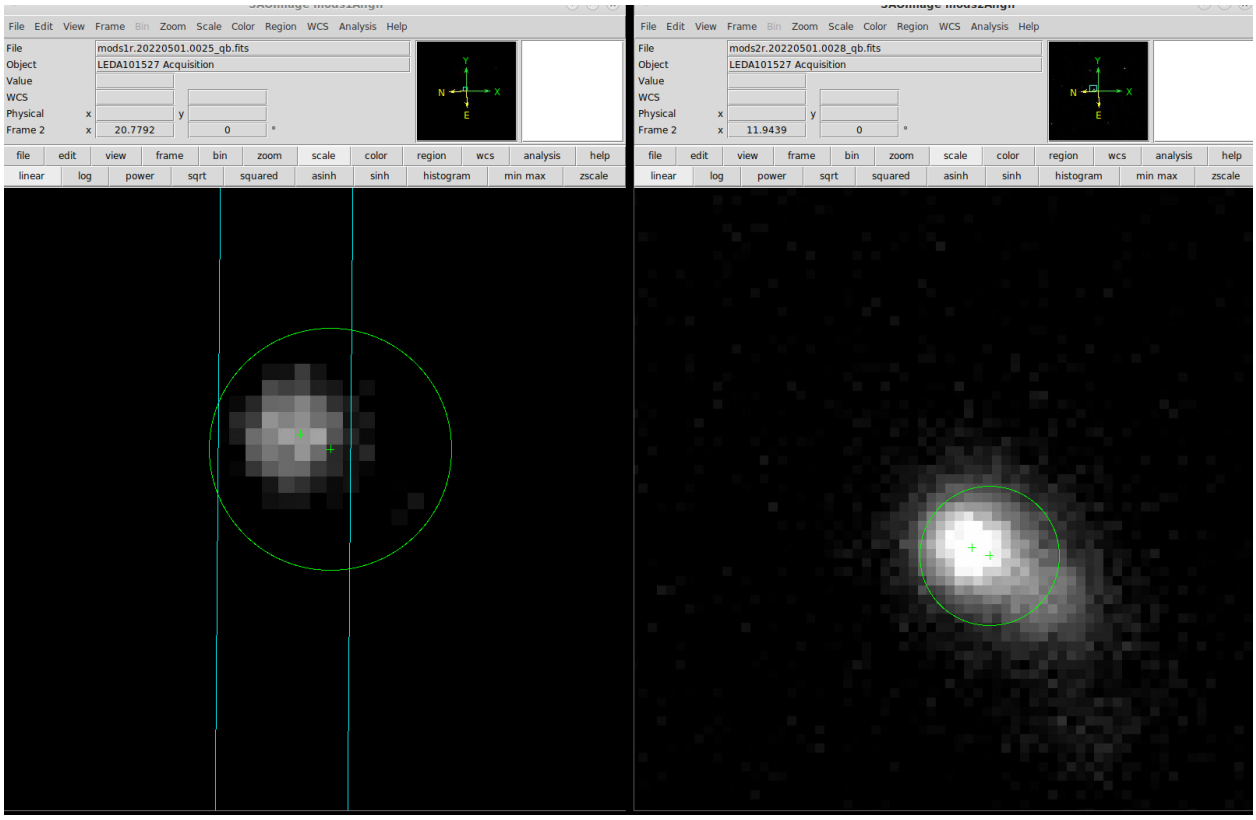
Still far from clear, but do LEDA101527 to see what it looks like at least.

OSU_XMDs_MODS/LEDA101527

~05:20 acqBinoMODS LEDA101527_UT0530.acq

m1r: 24 & 25 → offsetxy -0.037 10.554 rel → 26, ok
m2r: 27 & 28 → offsetxy 4.256 7.428 rel → 29, ok

The object has a core and some extended emission to the SE (lower right in the acquisition images at PA=-92 deg). The centroid seemed to be influenced by the extended emission, so I used "x" -which drew the green cross to the upper left.



05:26 execBinoMODS LEDA101527.obs

UT	m1b	m1r	m2b	m2r	seeing	airmass
05:26	15-18	27-30	15-18	30-33	1"	1.127

The first MODS2R spectrum (27) has ~12k counts in the peak of H alpha.

We took 1 extra set

OSU_ASASSN/NGC5273

We edited the POSANGLE to 97 deg.

07:07 acqBinoMODS NGC5273_edit.acq

m1r: 31 & 32 →offsetxy -1.062 9.888 rel →33, good
m2r: 34 & 35 → offsetxy 2.983 7.311 rel → 36, dx=-0.123" → 37, dx=+0.1" → 38, good

07:19 execBinoMODS NGC5273.obs

UT	m1b	m1r	m2b	m2r	seeing	airmass
07:20	19-24	34-39	19-24	39-44	0.82	1.022

07:38 While 4th image is being readout, the guide star jumped on DX. It came back (from the upper right corner to the lower left corner of the guide thumbnail and then to the hotspot) by the time the 5th pair were starting.

The script used the wrong name for the target - NGC3822 instead of NGC5273. I didn't change it, so the data will have NGC3822 for the object name.

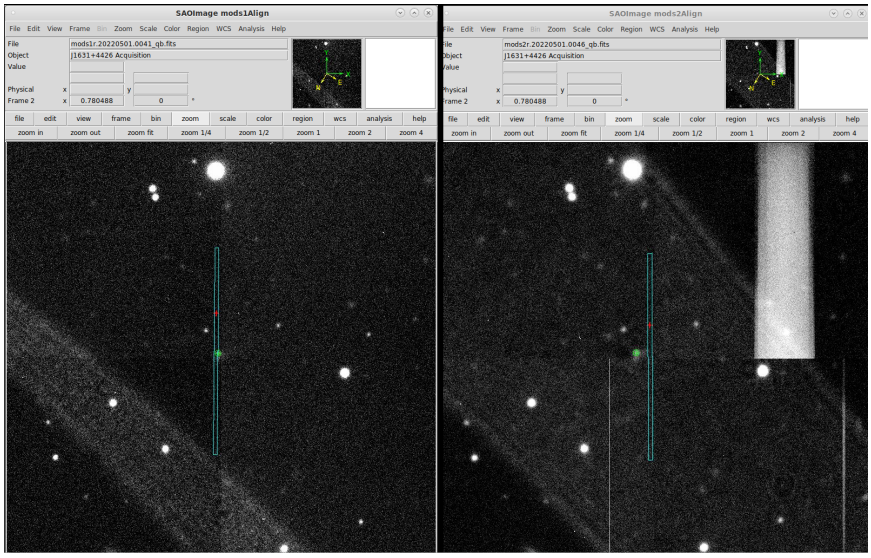
UVa_BCD_MODS/J1631

07:55 acqBinoMODS J1631.acq

During the acquisition, the FWHM is 0.95 on SX but 1.25" on DX. We are pointing out of the wind - dome seeing? or problems with collimation on the DX side?

m1r: 40 & 41 → offsetxy -0.530 11.649 rel → 42
m2r: 45 & 46 → offsetxy 3.962 8.005 rel → 47

Stray light arcs are on both MODS1 and MODS2 acquisition images - overlapping the object on MODS2. The vertical swath is from a bright star off the 1K x 1K field, but on the detector. There will be an elevated dark count in the columns that extend above the star, to the top of the detector on the spectra, but this should not affect the central region where the object trace will fall. The stray light background will be dispersed - the arc will change as the instrument rotates.



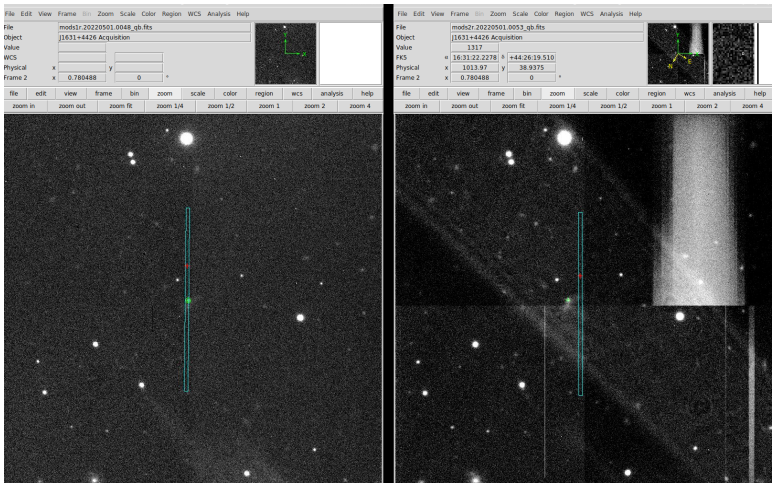
08:07 execBinoMODS J1631.obs

UT	m1b	m1r	m2b	m2r	seeing	airmass
08:09	25-27(28)	43-45(46)	25-27(28)	48-50(51)	0.8/0.88"	1.047
09:37	29-32	50-53	29-32	55-58	0.74/0.86	1.025

In the first spectra, we see emission lines of H alpha, H beta and [OIII].
09:07 avg FWHM 0.67/0.87 on SX/DX. I think the collimation is not so good on DX.

09:12 Preset was canceled - the elevation axis stopped 700 (MODS1) and 746 (MODS2) seconds into the 4th set of exposures.

09:23 acqBinoMODS J1631_edit1.acq (changed the slit exptime to be 40sec instead of 120sec).
m1r: 47 & 48 → offsetxy -0.328 11.209 rel → 49, a bit to the right, but within the slit.
m2r: 52 & 53 → offsetxy 4.114 7.708 rel → 54, looks centered
The arcs have moved, but it is still on the target in mods2.



09:37 execBinoMODS J1631.obs
I'm adding the index numbers to the table above - 2nd line.

10:36 The seeing has improved - FWHM ~ 0.57/0.7" on SX/DX

OSU_ASASSN/J180531

10:44 acqBinoMODS J180531_edit.acq

m1r 54 & 55 → offsetxy 0.078 10.478 rel → 56, dx=-0.123 → 57
m2r: 59 & 60 → offsetxy 4.331 7.356 rel → 61

10:57 execBinoMODS J180531.obs

UT	m1b	m1r	m2b	m2r	seeing	airmass
10:57	33-35	58-60	33-35	62-64	0.51/0.63	1.021

11:02 18-deg twilight

11:20 finished

BD+33 2642

11:20 acqBinoMODS bd332642.acq

m1r: 61 → offsetxy -0.868 11.764 rel → 62, good
m2r: 65 - Shell ripped, calculated offset was 4.328 7.752 rel, 66 is an image with the shell in the ripped state. … how bad is the IQ?

11:27 execMODS –mods1 –bino bd332642.obs

UT	m1b	m1r
11:28	36-38	63-65

11:35 12-deg twilight
11:41 The DX shell is back. Sending the MODS2 offset and taking an image

11:43 Starting the MODS2 spectra - the background is very high, though the peak is still 1000s of counts above it and first spectra may be useful.

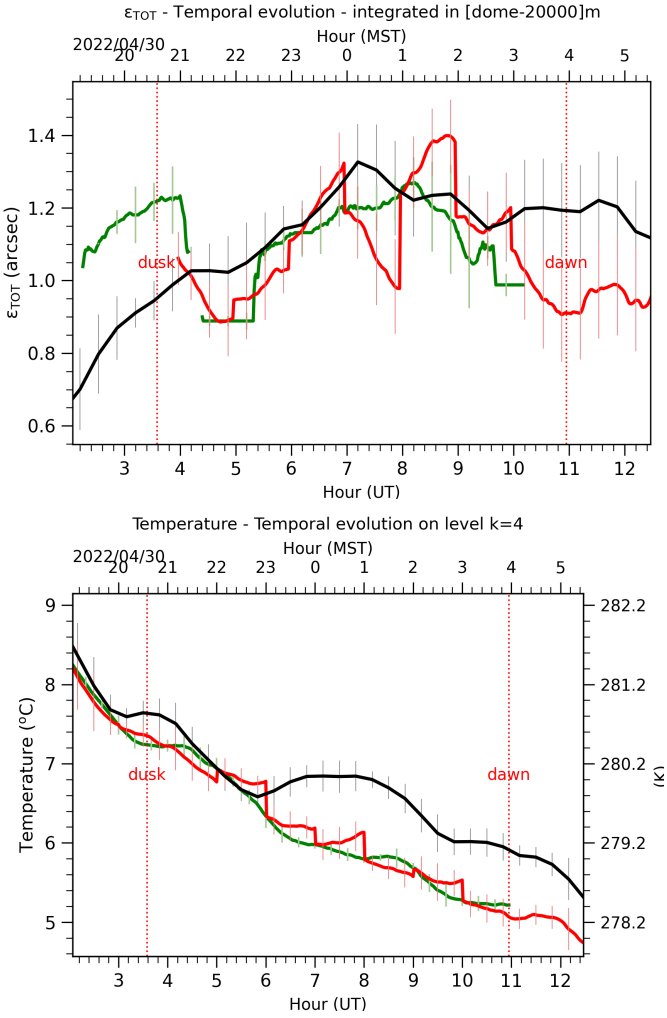
UT	m2b	m2r
11:43 - 11:57	36-38	69-71

~12:10 David is closing up.

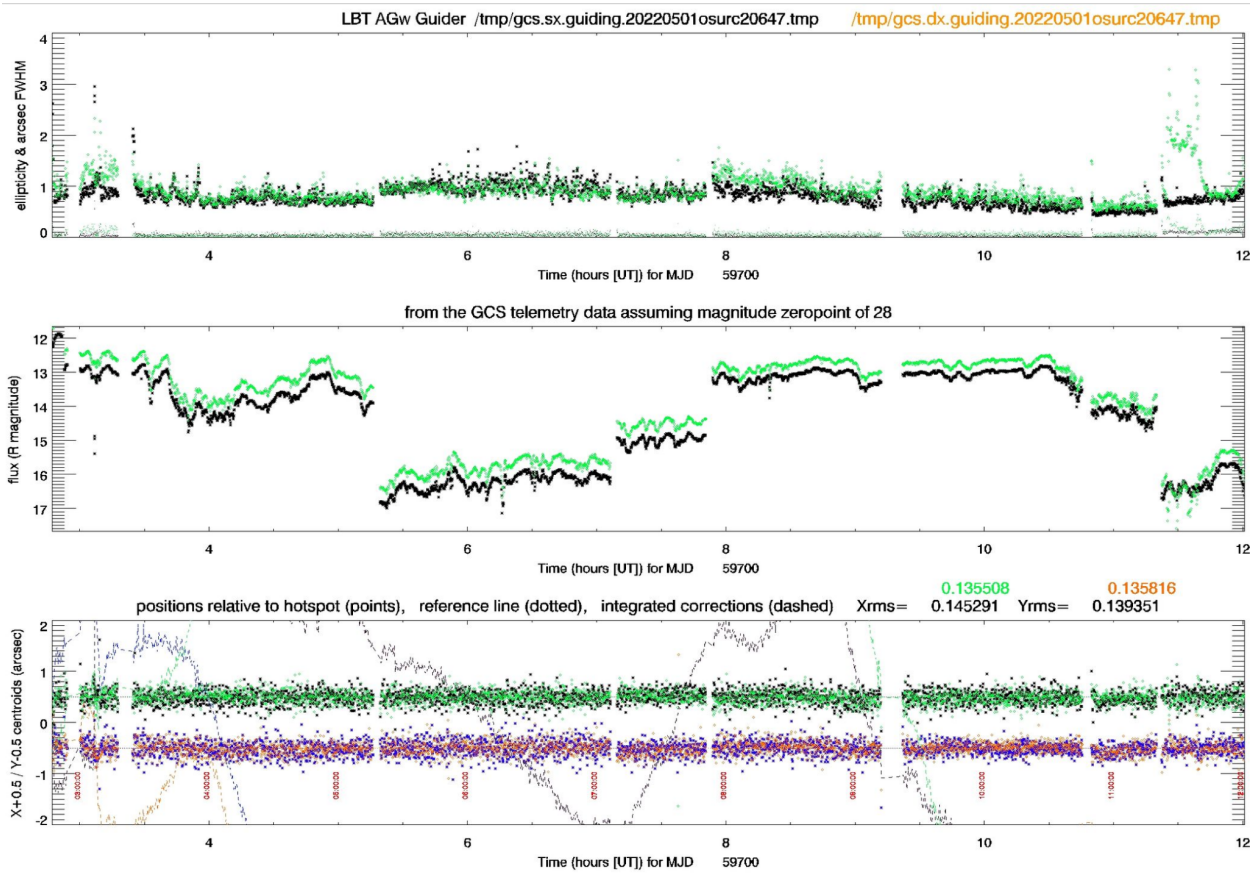
Closed Dome Calibrations

	m1b	m1r	m2b	m2r
5" slit flats	39-41 42-44	66-68	39-41 42-44	72-74
bias 1K	45-49	69-73	45-49	75-79
bias 8K	50-54	74-78	50-54	80-84

ALTA predictions



LBTplot


LBT AGw Guider /tmp/gcs.sx.guiding.20220501osurc20647.tmp /tmp/gcs.dx.guiding.20220501osurc20647.tmp
ellipticity & arcsec FWHM
Time (hours [UT]) for MJD 59700
from the GCS telemetry data assuming magnitude zeropoint of 28
flux (R magnitude)
Time (hours [UT]) for MJD 59700
positions relative to hotspot (points), reference line (dotted), integrated corrections (dashed) Xrms= 0.145291 Yrms= 0.139351
0.135508
0.135816
X+0.5 / Y-0.5 centroids (arcsec)
Time (hours [UT]) for MJD 59700