OSURC Nightlog 20211101 UT

Observer*: Olga Kuhn
Lead Partner Observer*: Peter Garnavich (ND)
Other Partner Observers*: Charlotte Wood (ND)
Special Assistants*: none
Telescope Operator: Josh Williams (LBT)
*** = from home**

Plan:

The plan is to start with binocular MODS and then switch to PEPSI to observe additional targets from the OSU_Low_Abund program.

Summary:

Issues:

LUCI1 is offline: The LUCI1 MOS error that occurred tihs morning during calibrations has not been recovered despite the efforts of Dave, James and the crew on the mountain.

The readme file for OSU_AbundLowZ that is in the queue tool doesn't match the latest versions sent. In the former, there is the advice not to go above 900-sec per object but in the latter, it is emphasized that SNR is the driving factor. To add to the confusion, I realized that the blue SNR, when measured near the center of the band is a bit lower than near the red end. In the blue, still, the SNR requirement of 100 was barely met for some objects, but others fell short (~80 near the center).

Weather:

The skies were clear and seeing excellent for the first part of the night. Clouds started to come in around 06:10, but they mostly held off until 11 UT when there were some passing clouds that caused the signal to drop by 2-3 magnitudes. They thinned out but never went away for the rest of the night.

Preparations:

luci[1|2].20211101.0NNN.fits
mods[1|2][b|r].20211101.NNNN.fits
lbc[b|r].20211101.HHMMSS.fits

Overview (times are given in UT):

00:50 Josh has opened the enclosure and corrected pointing.

00:54 Sending a collimation preset. BD+28 reaches elevation just around 18 deg

BD+28 4211 dual grating

~01:00 acqBinoMODS bd284211.acq

m1r: 3 offsetxy -0.576 11.524 rel → 4 → offsetxy -0.432 0.087 rel → 5 → looks ok
m2r: 3 offsetxy 4.089 8.130 rel → 4 → offsetxy -0.624 -0.360 rel → 5 -> looks ok

01:12 Waiting until at least 12-deg twilight.
Guide star FWHM ~ 0.9-1" however the images on MODS1 look a bit like they have a halo (image 0005).
Images 6 & 7 are just checks - still centered…
01:26 guide star FWHM ~ 0.92" (SX) and 0.6" (DX).

01:30 execBinoMODS bd284211_dualgrating.obs

UT	m1b	m1r	m2b	m2r	AM	FWHM on guiders (SX/DX)
01:30 -01:42	3-5	8-10	3-5	8-10	1.025	0.9"/0.8"

01:24 End of 12 deg twilight

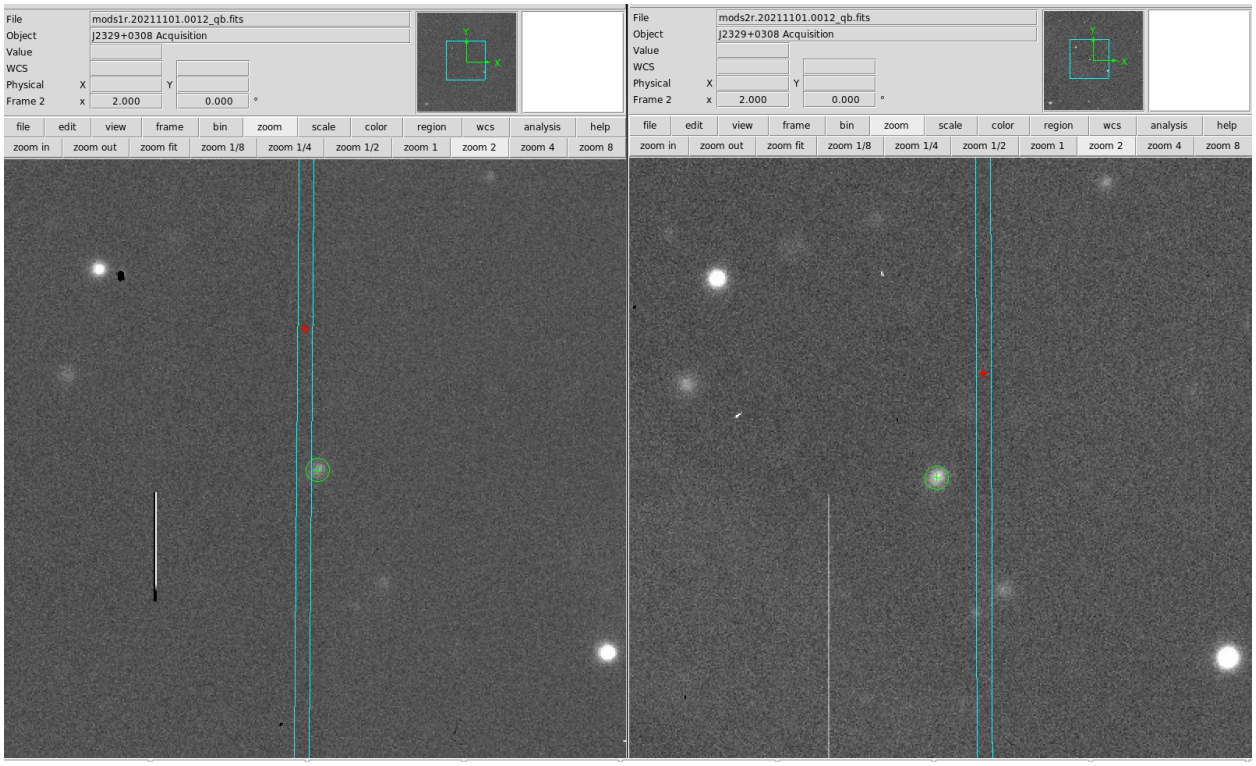
UVA_BCD_MODS/J2329

01:43 acqBinoMODS J2329_edit.acq

The acquisition script used 120-sec for the slit, field and confirmatory thru-slit image.
I edited it to take a 30-sec slit image, but then use 120-sec for the field & confirmatory thru-slit image.
(Note - the readme says the acquisition image is 60-sec, but the acq script has 120-sec).

m1r: 11 & 12 → offsetxy -1.004 11.103 rel → 13
m2r: 11 & 12 → offsetxy 3.687 8.182 rel → 13

Centroiding worked for both MODS1 & 2 acq images and the positions of the centroids are indicated below:



01:53 End of 18 deg twilight
02:00 execBinoMODS J2329.obs

UT	m1b	m1r	m2b	m2r	AM	FWHM
02:00-03:11	6-9	14-17	6-9	14-17	1.327	0.85/1.1"

02:02 The FWHM on the guide stars on SX/DX are discrepant - about 0.85"/1.1". We have noted a relation beween seeing discrepancies and the position of the telescope relative to the wind direction. Now the telescope is pointing to the SE and the wind is coming from the SW.

02:26 The target's faint but on the first set of spectra we can ID lines of Hbeta/[OIII] and probably Halpha in the red.

03:11 Finished

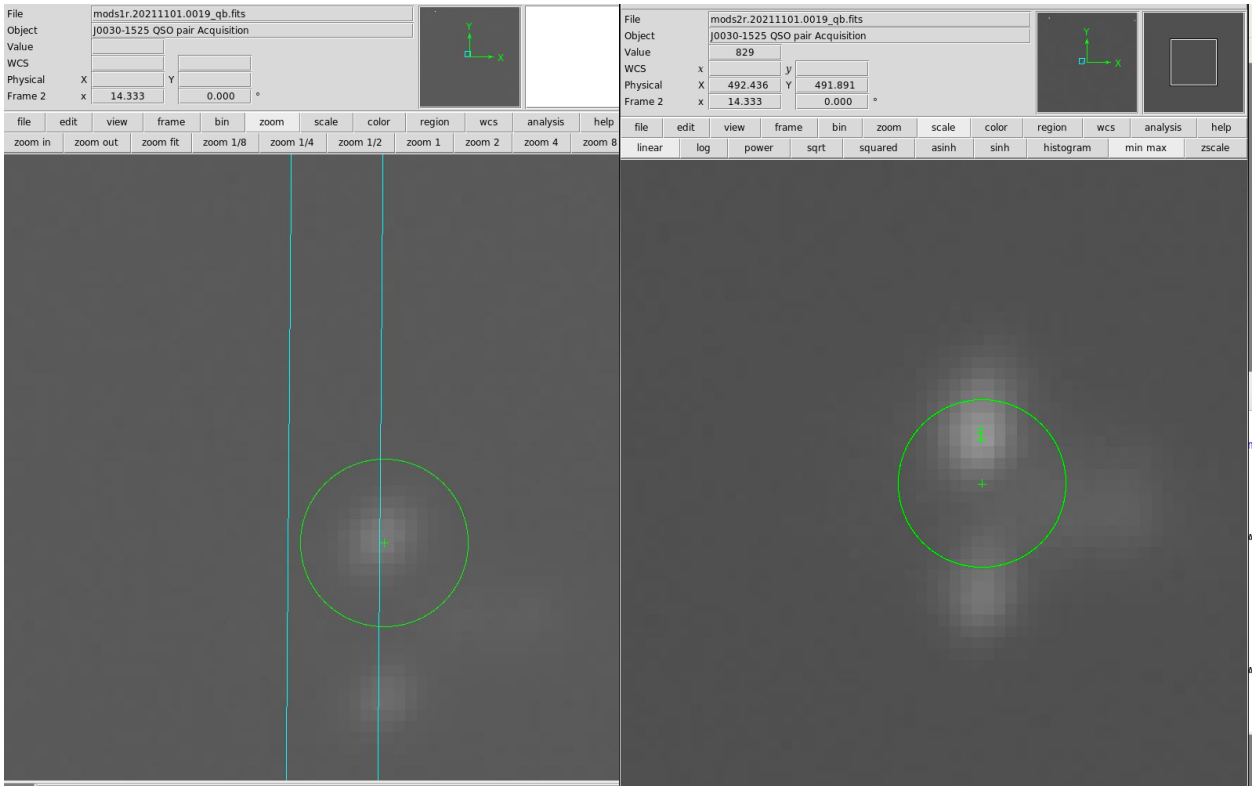
ND_BEARS/j0030-QSO

03:14 acqBinoMODS j0030-QSO.acq

m1r: 18 & 19 → offsetxy -0.470 10.774 rel → 20 → tweaked it by +0.123"
m2r :18 & 19 → offsetxy 3.874 8.398 rel → 20 → looks good

instconfig timed out on MODS2 - aborted the script and did the acq piecewise with acqMODS --mods2 -i/-a.

Centroiding worked for MODS1 but not for MODS2 - x. On MODS2, the 2nd "x" from the top is the one we took:



03:30 execBinoMODS j0030-QSO.obs

UT	m1b	m1r	m2b	m2r	AM	seeing
03:32-03:58	10-12	21-23	10-12	21-23	1.665	0.9"

ND_BEARS/j0030-gal

03:58 acqBinoMODS j0030-gal.acq

m1r: 24 & 25 → offsetxy -0.398 10.955 rel → 26 → tweaked it by -0.184" → 27 → overshot, tweaked it by 0.123"
m2r: 24 & 25 → offsetxy 3.785 8.360 rel → 26 → looks good

04:01 FWHM on guiders 0.84/0.82" during the acquisition. Airmass 1.571

MODs2 images appear a bit elongated.

04:17 execBinoMODS j0030-gal.obs

UT	m1b	m1r	m2b	m2r	AM	seeing
04:17-04:45	13-15	28-30	13-15	27-29	1.529	0.8"

04:45 Finished

UVa_BCD_MODS/J0100

04:45 acqBinoMODS J0100_edit.acq

This script used 60-sec for the 3 acquisition images. I dropped the slit image to 30-sec.

m1r: 31 & 32 → offsetxy -0.737 10.833 rel → 33 → tweaked it by -0.1"
m2r: 30 & 31 → offsetxy 3.738 8.019 rel → 32, looks good

04:49 The seeing is ~0.7" during the acq sequence.

04:58 execBinoMODS J0100.obs

UT	m1b	m1r	m2b	m2r	AM	seeing
04:58-06:06	16-19	34-37	16-19	33-36	1.099	0.56/0.65

There are a lot of emission lines - Hbeta/[OIII], Halpha, [NII], [SII]. This lines are quite a bit brighter than in the spectrum of J2359.

06:07 Finished

ND_lamost/lamost

06:08 acqBinoMODS lamost_pa-10.acq

m1r: 38 & 39 →
m2r: 37 & 38 →

06:13 The seeing is 0.44/0.55" during the acquisition.
Since it is so good, the PI decided to change the slit width to 0.6"

acqBinoMODS lamost_pa-10_slit0p6.acq

m1r: 40 & 41 → 42 → -0.09" tweak → 43 looks well centered
m2r: 39 & 40 → 41 → 0.06" tweak → 42, actually still seems a bit to the left, but we're taking it

06:35 execBinoMODS lamost_slit0p6.obs

UT	m1b	m1r	m2b	m2r	AM	seeing SX/DX
06:35-	20-38	44-61	20-38	43-62	1.039	0.46/0.59"

07:32 The seeing is still very good: FWHM on the guider images ~ 0.58/0.6" (SX/DX)

We've had passing light cirrus since 06:10, around the time we started to acquire this target.

07:57 Finished and starting to reconfigure to PEPSI

binoMODS → binoPEPSI

07:58 Starting to reconfigure.

08:07 Finished with reconfiguration (11 min)

08:15 Josh is checking pointing and collimation

OSU_AbundLowZ targets

08:20 Sending preset to **J03004383+0218124**

08:23 Starting the exposure. (Increased binning to 4 on the guider). FWHM on guider 0.52/0.59"
The clouds are thicker than they were earlier.
The SNR on the red was 180 but on the blue 83 so we'll repeat this exposure.

08:57 Slewing to **J08044426+2210289**
09:03 Starting the exposure. GCS WFS exposure time dynamically scaled down to 9 seconds and spots were too dim. Josh had to manually increase it (related to IT 8477).

09:08 The clouds have lightened up.
09:13 Airmass 1.465.

This is about the same magnitude as the previous target (according to the readme) but conditions have improved a bit so we'll add 5 minutes to the ongoing exposure (20-min total).

SNR was about 87 in the blue but 200 in the red. We noted the readme linked to the OSU queue page requests limiting the total exposure time to 15-min, so we didn't repeat it. However, the readme with the new targets does not have that and requests that the SNR be the driving factor.

~09:30 Slewing to **J08520484+4416336**

09:32 started the exposures.

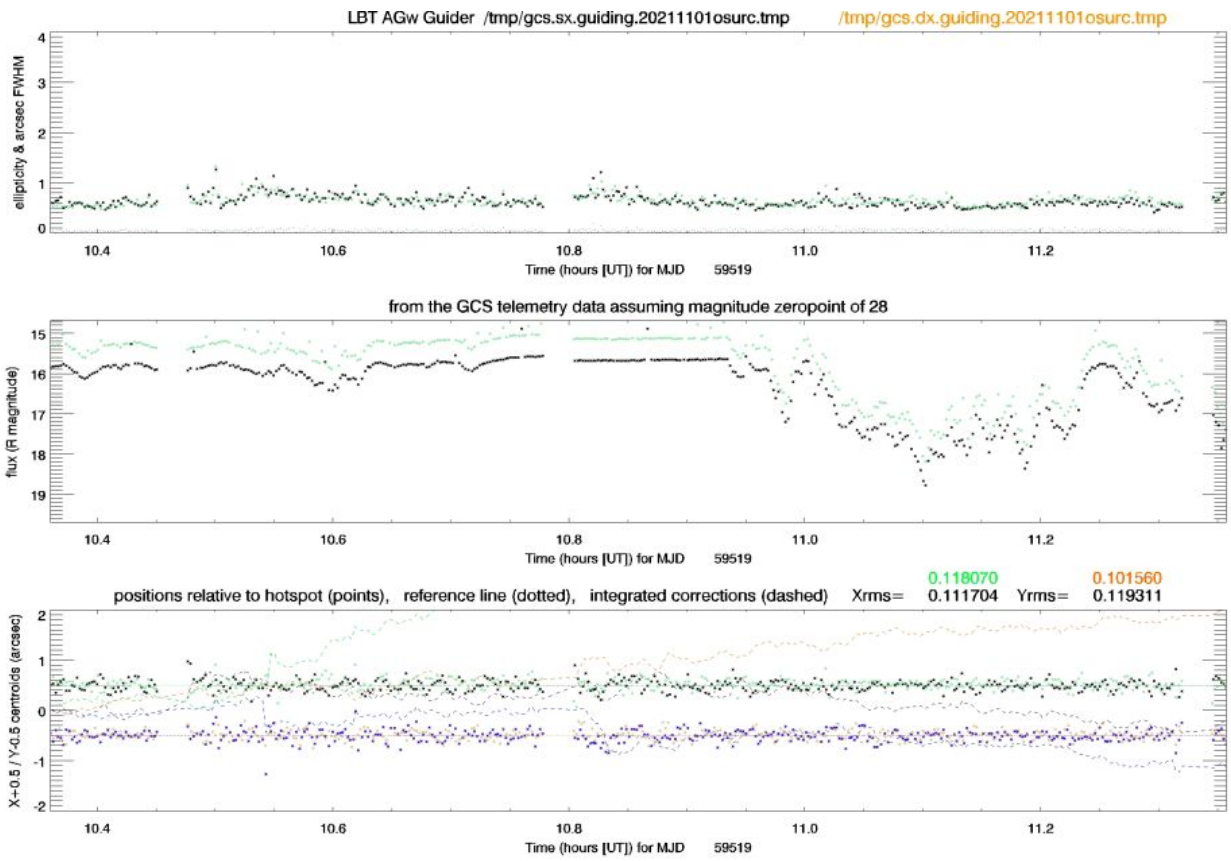
09:36 Seeing has worsened and FWHM on guider is now 1.16/1.11" (SX/DX).
SNR was ~90 on the blue and 220 on the red.

09:48 Slewing to **J08452357+1758115**
09:52 Starting the exposure. Seeing back down to ~0.75/0.73".
SNR ~ 100 blue and 220 red

03:08 Slewing to **J08323857+0940407**
03:11 Starting the exposures. Seeing down to 0.6/0.56" Thicker clouds coming in towards the end of the exposure. SNR ~ 80 on the blue and 190 on the red.

03:27 Slewing to **J09114276+1757236**
03:31 Starting the exposures. SNR ~ 80 on the blue and 180 on the red.

03:47 Slewing to **J09404750+2956449**
03:49 Starting the exposures.
04:00 The clouds are getting worse - the guide star signal dipped twice by >~1 mag but came back. We gave it 30 min instead of 15. Over 15 min, though, was slogging through clouds (see the LBTplot at the end).



11:19 Slewing to **J09380275+1817054**
11:23 Starting the exposures.

This one only had SNR ~50 Blue and 130 Red

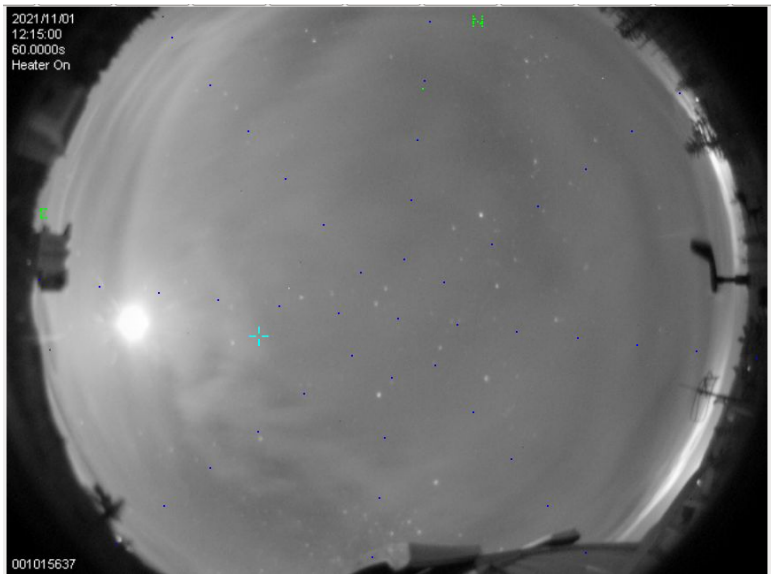
11:38 Slewing to **J10395654+5753080**

11:42 Starting exposures. Clouds have been moving away and the count rate on the photon counter is higher. Seeing 0.78/0.76".

SNR is ~86 - 100 in the blue and 200 in the red. I've been making the measurement near the center, although for the blue, at leats

11:58 Slewing to **J10072784+1916102**
12:04 Starting the exposures. In a clear patch now but more clouds are coming. With 5 min to go, the signal is dropping by >2 mags. We are stopping the exposure and reading out early. 11:05 instead of 15:00 minutes.

SNR ~75 in the blue (central - higher towards the red, bottom) and 170 in the red.



12:15 Paused for clouds (see above).

12:27 Slewing to **J10531127+2118137**
It is the brightest of the remaining targets - but it is also closest to the moon.
Waiiting … clouds…

12:34 Starting the exposures. The clouds are getting thinner.
12:50 Finished.

05:14 18 deg twilight begins
05:43 12 deg twilight begins

05:55 Josh is closing up.

06:34 Sunrise

Calibrations

06:11 PEPSI:

PEPSI

ThAr comp lamp and continuum flat spectra for 300 mic fiber & CD2 and CD4

MODS

	m1b	m1r	m2b	m2r
bias bin 12	39-43	62-66	39-43	63-67
0.6" slitflats bin12			44-46 47-50	

06:35. mods2b images 44-49 are not going to modsDisp but the LastFile = NextFile -1. The images are on /newdata.

PEPSI OB

The OB file is 20211031.obs.
This is just the plan for a start time of 01:20 MST (08:20 UT).
The last two objects will not be done

Sun Oct 31, 2021

Name	V	Inst	Fiber	BlueArm		RedArm		Start MST	End	Duration	Phase	PID
2MASS J03004383+0218124	12.00	PFU	300	CD2	00:15:00	CD4	00:15:00	01:20:00	01:35:19	00:15:19	Griffith	
2MASS J08044426+2210289	12.44	PFU	300	CD2	00:15:00	CD4	00:15:00	01:37:19	01:52:38	00:15:19	Griffith	
2MASS J08520484+4416336	11.74	PFU	300	CD2	00:15:00	CD4	00:15:00	01:54:38	02:09:57	00:15:19	Griffith	
2MASS J08452357+1758115	11.93	PFU	300	CD2	00:15:00	CD4	00:15:00	02:11:57	02:27:16	00:15:19	Griffith	
2MASS J08323857+0940407	12.22	PFU	300	CD2	00:15:00	CD4	00:15:00	02:29:16	02:44:35	00:15:19	Griffith	
2MASS J09114276+1757236	12.17	PFU	300	CD2	00:15:00	CD4	00:15:00	02:46:35	03:01:54	00:15:19	Griffith	
2MASS J09404750+2956449	12.48	PFU	300	CD2	00:15:00	CD4	00:15:00	03:03:54	03:19:13	00:15:19	Griffith	
2MASS J09380275+1817054	11.90	PFU	300	CD2	00:15:00	CD4	00:15:00	03:21:13	03:36:32	00:15:19	Griffith	
2MASS J10395654+5753080	12.02	PFU	300	CD2	00:15:00	CD4	00:15:00	03:38:32	03:53:51	00:15:19	Griffith	
2MASS J10212078+2902550	12.34	PFU	300	CD2	00:15:00	CD4	00:15:00	03:55:51	04:11:10	00:15:19	Griffith	
2MASS J10072784+1916102	11.89	PFU	300	CD2	00:15:00	CD4	00:15:00	04:13:10	04:28:29	00:15:19	Griffith	
2MASS J10531127+2118137	11.46	PFU	300	CD2	00:15:00	CD4	00:15:00	04:30:29	04:45:48	00:15:19	Griffith	
2MASS J10480474+1751079	11.80	PFU	300	CD2	00:15:00	CD4	00:15:00	04:47:48	05:03:07	00:15:19	Griffith	
~~2MASS J18454461+0243122~~	~~12.50~~	~~PFU~~	~~300~~	~~CD2~~	~~00:15:00~~	~~CD4~~	~~00:15:00~~	~~05:05:07~~	~~05:20:26~~	~~00:15:19~~	~~Griffith~~	
~~2MASS J22553856+0148192~~	~~12.50~~	~~PFU~~	~~300~~	~~CD2~~	~~00:15:00~~	~~CD4~~	~~00:15:00~~	~~05:22:26~~	~~05:37:45~~	~~00:15:19~~	~~Griffith~~	

ALTA predictions

LBTplot

The SX (black) and DX (green) guide star FWHM and flux are plotted below.